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BETTER FRUIT

VOLUME VIII

OCTOBER, 1913

NUMBER 4

REFERENCE NUMBER—KEEP IT

Brief reference on Pruning, Winter and Summer; Cover Crops; Irrigation; Thinning All Varieties of Fruits; Picking All Varieties of Fruits; Sorting All Varieties of Fruits; Packing All Varieties of Fruits; Reference tables concerning principal varieties of Peaches, Early Apples, Winter Apples, Crabs, Plums, Grapes, etc., giving the name of the variety, color, time for picking in early districts and late districts, percent of different sizes, uses for dessert, marketing or cooking, and months they are good for consumption in common storage; specifications for box materials and nails for all varieties of fruit, and much other valuable general information.

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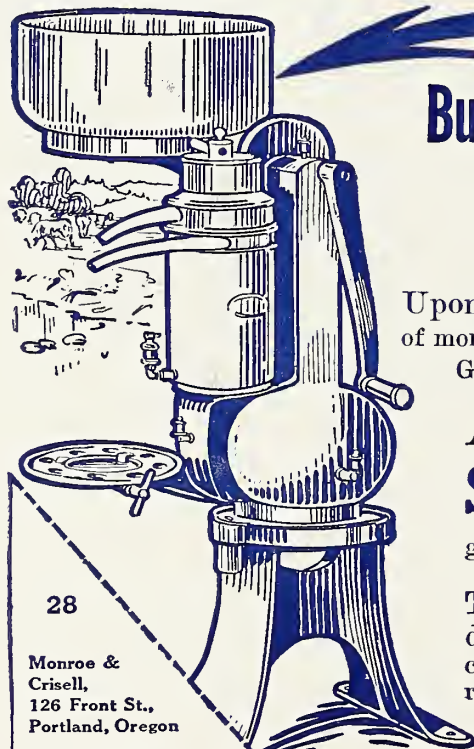
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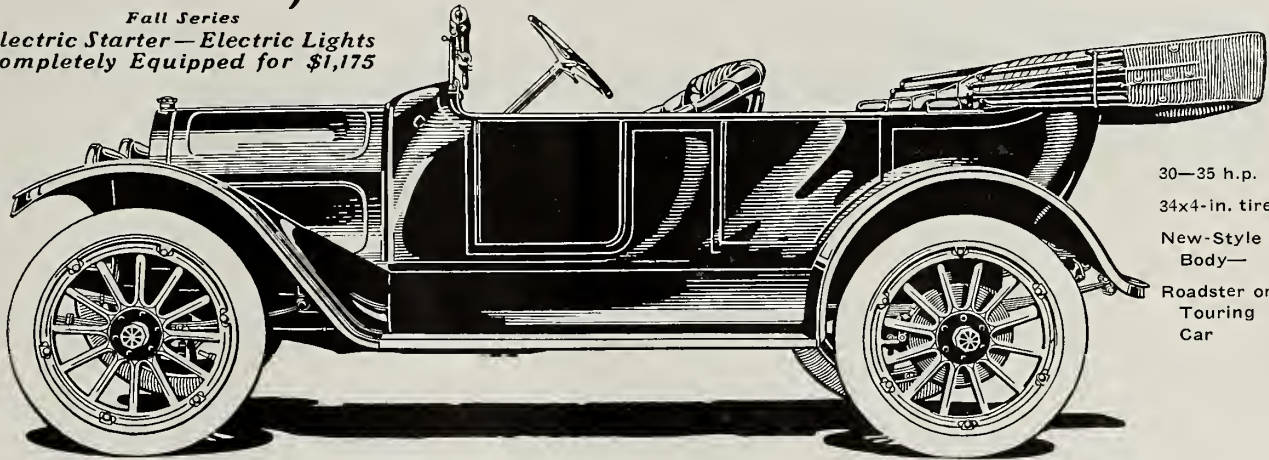
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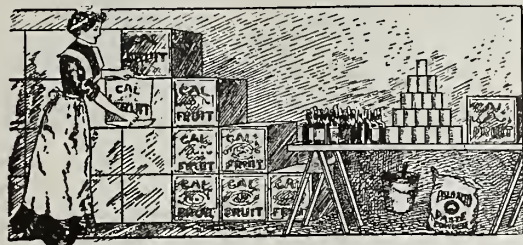
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BETTER FRUIT

AN ILLUSTRATED MAGAZINE PUBLISHED MONTHLY IN THE INTEREST OF MODERN, PROGRESSIVE FRUIT GROWING AND MARKETING

Information for the Consumer of Apples and the Dealer

Copyrighted 1913, by C. C. Hutchins, "Apple Talk," White Salmon, Washington

THE last few years have demonstrated the necessity for co-operation among fruitgrowers, scientific business methods of selling and distribution, and perhaps equally important, educational information for the consumer in order that he or she may be able to purchase apples suited to their taste and each variety in its proper season. This information will also be valuable to the wholesaler and retailer. Sixteen varieties of apples have been selected which are grown extensively in the Northwest, and these varieties are the ones which the Northwest produces in a higher state of perfection than any other district in the world.

The following table is arranged in a simple manner, giving varieties in the order of their maturity and the months in which they are best for consumption. The first column gives the name of the variety. The second column gives the eating quality in three general terms, excellent, good and fair. The third column gives the cooking qualities, using the same terms. The fourth column gives the months in which these apples are best for consumption, on delivery from common storage. The fifth column gives the additional months in which the apples are prime if kept on cold storage. However, many of these varieties, particularly the ones of firm flesh, if picked at the right stage of

maturity and promptly placed in cold storage, will remain in prime condition two or three months longer. In this class may be mentioned the Newtown Pippin, Winesap, Rome Beauty and Arkansas Black. The sixth column indicates in a few words the flavor of the apple. The seventh column indicates the range of size; for instance, 72 means the box contains 72 apples. 72 to 150 indicates that nearly all the boxes of this variety will vary in size as numbered, from 72 to 150 in each box. All apples in each box will be of uniform size. However, a small per cent of the boxes of any variety may be either larger or smaller than the range given. The following is a list indicating the number of apples contained in each box according to their size, including all sizes that at the present time are being packed, 36, 41, 45, 48, 50, 54, 56, 64, 72, 80, 84, 88, 96, 104, 112, 113, 120, 125, 128, 138, 150, 163, 175, 188, 200, 213, 225. If the range of numbers are small it indicates the variety is large—for instance King of Tompkins, 72 to 128, indicates a large variety. Grimes Golden, 112 to 163, indicates a smaller sized variety. The eighth column gives the color to assist the purchaser to recognize the variety. The last column gives the origin of the variety, and it is with pardonable pride that attention is called to the fact that out of the sixteen varieties named, fourteen originated in the United

States, one in Canada and one in Germany.

All Northwestern boxed apples will be labeled on the end of the box. The reading matter will specify where the apples were grown, by what association they were packed, the number of apples contained in the box, the grade and the name of the variety. If you buy boxed apples with association labels, or with labels of well-known shipping concerns, you can feel assured of quality as represented. The Northwestern apples will be put in three grades, extra fancy, fancy and C grade. Extra fancy apples are the most perfect in color and free from blemishes of all kinds. The fancy grade will be less highly colored with only slight blemishes, and while not quite as perfect the eating quality will be the same. The C grade will be good usable apples for either eating or cooking, according to variety. Some shippers may use other terms to signify these grades. Information about their significance can easily be obtained from the jobber or retailer. No diseased fruit will be permitted in any grade. Buy the best grade you can afford; in any case you will get satisfaction. If you use apples in quantity you will find it cheaper to buy by the box. Be sure to buy Northwestern boxed apples from fruit dealers and grocers with established reputations for straight dealing.

Variety	Eating Quality	Cooking Quality	Mo's for Eating Common Storage	Mo's for Eating Cold Storage will include	Flavor	Size	Color	Origin
GRAVENSTEIN	Excellent	Excellent	Aug. Sept.	October	Juicy, crisp	72-150	Red & yellow striped	Germany
KING OF TOMPKINS...	Good	Good	Sept. Oct.	November	Mild, juicy	72-128	Red to yellow	New Jersey
McINTOSH RED	Excellent	Fair	Sept. Oct.	Nov. Dec.	Pleasant, juicy	112-200	Bright red	Ontario
JONATHAN	Excellent	Good	Oct. Nov.	December	Mild, juicy, crisp	96-225	Bright red	New York
GRIMES GOLDEN	Excellent	Fair	Oct. Nov.	December	Mild, pleasant	112-165	Yel. some pink blush	Virginia
WAGENER	Excellent	Good	Oct. Nov.	December	Juicy, subacid	96-165	Red & yellow striped	New Jersey
SPITZENBERG	Excellent	Excellent	Nov. Dec. Jan.	Feb. March	Spicy, subacid, crisp, rich, juicy.	80-150	Bright red	New York
DELICIOUS	Excellent	Fair	Nov. Dec. Jan.	Feb. March	Mild, slightly sweet	72-140	Red & yellow mottled	Iowa
WINTER BANANA	Good	Fair	Dec. Jan.	Feb. March	Mild	80-150	Yellow, pink blush	
ORTLEY	Excellent	Excellent	Dec. Jan.	Feb. March	Mild, juicy, subacid	80-150	Golden yellow	New Jersey
RED CHEEK PIPPIN...	Good	Good	Dec. Jan.	Feb. Mar. Apr.	Mild	80-150	Yel. some pink blush	New Jersey
STAYMAN WINESAP ..	Good	Fair	Dec. Jan.	Feb. March	Mild, subacid	96-175	Yellow, red stripe	Kansas
ROME BEAUTY	Very good	Good	Dec. Jan.	Feb. Mar. Apr.	Pleasant, subacid	72-165	Yellow & red mottled	Ohio
NEWTOWN PIPPIN ...	Excellent	Excellent	Jan. Feb. Mar. April, May		Acid, very juicy, crisp.	80-200	Yellow, some blush	New York
WINESAP	Excellent	Good	Jan. Feb. Mar. April, May		Subacid, crisp, very juicy.	128-225	Dark red	New Jersey
ARKANSAS BLACK	Fair	Good	Feb. Mar. Apr. May, June		Moderate	72-165	Deep dark red	Arkansas



Leading Varieties of Pears Grown in Rogue River Valley, Arranged in the Order of their Ripening Period—Bartlett, Howell, Anjou

Pear Culture—History and Present Status

By P. J. O'Gara, Pathologist, Medford Oregon

THE pear is without doubt one of the most favorite fruits, although in its wild state its astringent qualities are so pronounced as to render it unpalatable. Under cultivation it has become an excellent fruit for all purposes, whether for dessert, for canning, for culinary use or in the fresh state. The cultivation of the pear extends to the remotest antiquity. It is mentioned in the oldest Greek writings and was cultivated by the Romans. It was common in Syria, Egypt and Greece, and from the latter country was introduced into Italy. The word "pear" or its equivalent occurs in all Celtic languages, while we also find it in Slavonic and other dialects; and from this it is inferred that cultivation of the pear, from the shores of the Caspian Sea to the Atlantic, was practiced in very ancient times. According to Virgil, Cato, Pliny and other Roman writers, the varieties in cultivation were very numerous, and from the names of important varieties usually referred to the countries from which the trees were imported. Unfortunately, none of the old Roman varieties exist today, but from the writings of Pliny we have every reason to believe that their best varieties of pears were very poor in comparison with the choice varieties under cultivation at the present time.

The pear of quality really dates from about the seventeenth century. However, it was not until Professor Van Mons of the University of Louvain, Belgium, by his perseverance and indefatigable labors succeeded in producing an immense number of new varieties of pears by selective breeding, that the growing of pears of commercial quality was put upon a sound basis. His whole

life was mostly devoted to pear culture, and from among the 80,000 seedlings raised by himself we find the finest cultivated varieties of today—such as Bosc, Diel and others. The work of Van Mons has given the little country of Belgium the title of "The Eden of the Pear Tree." The net results of his work were given to the world a little more than one hundred years ago. Another worker, Thomas Andrew Knight, an Englishman, by hybridizing also produced varieties of noted quality. These two scientists and their followers, working from different points of view, produced fruits that have, by further cultivation, reached the limit of perfection.

From the standpoint of the botanist, there are some differences in opinion as to the species from which cultivated pears are descendants. There are some who hold that cultivated pears have descended from at least three species, while others who have very carefully studied the subject refer all cultivated pears to one species, the individuals of which have in course of time diverged in various directions so as to form now six races: (1) Celtic, (2) Germanic, (3) Hellenic, (4) Pontic, (5) Indian, (6) Mongolic. From the Germanic race we have what is commonly known as the European pear, *Pyrus communis*, while from the Mongolic race we have the Oriental pear, *Pyrus chinensis*. Of course, it is understood that there are many wild varieties which come under the various groups. From the horticulturist's point of view there is a totally different classification, namely, dwarf, standard and Oriental. The dwarf pear consists mainly of European varieties propagated by grafting onto rooted

cuttings of the Angiers quince. The Japan Golden Russet is also used for dwarfing, but it is to be generally understood that the dwarf pear means the pear worked on the quince root. Standards consist of the European varieties propagated on the pear root, the stocks for this purpose being European or Japan pear seedlings or rooted cuttings of some of the Oriental pears. The Orientals are those which are partly or wholly of Chinese or Japanese origin. So far as the pure Oriental pear is concerned, there are very few plantings. The important commercial varieties of this group are really hybrids between the Oriental and the European pears and consist of such varieties as Kieffer, La Conte, Garber, Smith and others of minor importance. The reason for this separation into three groups is because the requirements of the varieties coming under each group are usually quite different, demanding distinctive cultural methods. With few exceptions, dwarfs must be considered as belonging to the small gardener or the amateur horticulturist; the Oriental hybrids, so far as the quality of their fruit is concerned, have no place in the commercial pear orchards of the Pacific Coast. Therefore, in considering commercial pear growing in the better sections of the extreme West, we must have in mind the better varieties which have sprung from the European type or group grown as standard trees.

In looking over the more or less voluminous literature on pear culture, we find it frequently stated that pear trees are more difficult to maintain in a healthy, productive condition than apple trees, and cannot be grown with the same degree of success over so

wide an area of country. This statement is only partly true, for while the pear does not enjoy the same degree of success over so wide an area of country as does the apple, nevertheless with proper soil and climatic conditions the pear will much outlive the apple. There are natural pear sections or districts, just as there are apple districts, and given the suitable varieties for such districts the pear will always outlive the apple. At the same time the pear will have produced commercial fruit for a longer period and the net returns will be much greater. In its wild state it is hardier and longer lived than the apple, making a taller and more pyramidal head and becoming much larger in trunk diameter. While apples are known to reach the great age of 200 years, many pear trees are known to be 500 years old. On the Pacific Coast we find pear trees still in bearing in the old Mission orchards of California. These pear trees after nearly two and a quarter centuries are still holding their own, with a few olives and date palms as companions standing as reminders of the old civilization.

In a short article such as this it is quite impossible to discuss the important subject of varieties at any length. Considering the Pacific Coast, we find a wide variety of soil types (even in restricted areas), climatic conditions, elevation, etc. The varieties best adapted under the various conditions is a subject for wide discussion. In a few localities, principally throughout California and the Rogue River Valley in Southern Oregon, the matter of varieties best suited to the varying conditions has been well worked out, so that at this time growers are not making the mistakes so common in the past. Besides the matter of soils, climatic conditions, etc., the important matter of the market demands for the various varieties must be well understood. Taking the Rogue River Valley as an example, all plantings now made, or which have been made during the past five or six years, take into consideration all the above factors. In going over my notes I find that over fifty varieties of pears may be found growing in the Rogue River Valley, yet out of this number seven varieties are really commercial. The varieties in the order of their ripening are Bartlett, Clairgeau, Howell, d'Anjou, Bosc, Comice, Nelis. Besides these seven varieties, we have planted considerable acreages of P. Barry and Forelle; however, these latter varieties are not yet in bearing commercially. I do not mean to say that the other varieties grown in the valley are not good; as a matter of fact they are excellent, nevertheless the market demand does not warrant the multiplication of varieties. In the seven commercial varieties mentioned it would be just as well to omit the Clairgeau, which in no way compares with the excellence of the other varieties. The great pear districts of the Pacific Coast, so far as the future of the pear industry is con-



Bearing Branches of Bartlett Pears

cerned, will be Southern Oregon (Rogue River Valley) and California, principally the great Sacramento Valley and its tributary districts. In this natural pear belt any one or all of the commercial varieties of pears may be grown; that is to say, hundreds of varieties. But pear growers must not fall into the error of planting too many varieties, as has been the case in commercial apple growing throughout the entire Northwest. Not long ago a horticulturist, waxing enthusiastic over the excellent quality of the pear as grown in this district (Rogue River Valley), said that the pear growers were making a mistake in not growing at least 100 varieties. Viewing the pear situation from the apple standpoint, especially considering market conditions, it would be financial suicide for any district to grow commercially



Bearing Branches of Bosc Pears

more than six or eight varieties. If there is any doubt in the matter of too many varieties it would be well for the reader to secure a copy of a paper written by Mr. W. F. Gwin, manager Northwest Fruit Exchange, Portland, Oregon, entitled "What is the Matter With the Apple Business?" In this most excellent paper Mr. Gwin shows clearly the danger of too many varieties.

It sometimes happens that new or better varieties are needed, but they should be added with the ultimate intention of having them take the place of inferior varieties already growing and not to increase the total number of varieties. This holds true with the individual as well as with the district as a whole. Where orchards are large the number of varieties grown may be the maximum number suited to the district, providing the soils are suitable; however, with the small grower it is best to restrict the plantings to two or three varieties. As a business proposition, it is never advisable to plant less of any one variety than will produce carload shipments, unless it be for pollination purposes.

In setting out a pear orchard less regard may be had for the character of the soil than for almost any other kind of fruit. It will generally do well over a tight clay hardpan where almost any other fruit would fail. It will also thrive in clay loams and adobes as well as in calcareous and alkali soils. The pear will flourish whether the water is near or far from the surface, and can endure complete submergence in water for a considerable length of time without being killed. During periods of high water in the lower Sacramento River districts I have seen pear orchards completely under water, which did not fully subside for several months. The regular orchard work, such as spraying, pruning and thinning, was carried on by the use of hoats and barges. However, the pear demands a good soil for its best development, and naturally the heavier alluvial, clay loam and other types rich in plant food are the best. The variety which is least exacting is the Bartlett. Anjou, Clairgeau, Howell, Nelis and Bosc thrive on heavy soils, including the heavy adobes. For early bearing such varieties as the Bosc and Comice are best grown upon the clay loam soils. The Comice comes into bearing rather slowly if grown on too heavy soil. While the Nelis produces the best quality of fruit on the lighter clay loam soils it does not attain as good size as the market demands. However, increased size of the fruit might be secured by irrigating during seasons of minimum rainfall.

The distance for planting standard pear trees will depend somewhat upon the varieties. Due regard must be had for such varieties as the Bosc or Anjou, which have a tendency to grow in a spreading form, as against the Comice and Bartlett, which are naturally upright growers. The maximum distance for spreading varieties should not be



Leading Varieties of Pears Grown in Rogue River Valley, Arranged in the Order of their Ripening Period—Bosc, Comice, Winter Nelis

over 30 feet, either square or hexagonal system. The minimum distance should not be less than 22 feet, square or hexagonal. The average distance practiced in the Rogue River Valley is 25 feet, both systems. However, the common practice is not to plant solid blocks of any one variety, for the reason that certain varieties are self-sterile and require the pollen of other varieties to fertilize the blossoms.

Self-sterility and self-fertility are not constant quantities in the same variety; that is to say, the variety may be self-sterile in one district and self-fertile in another. One cannot tell beforehand just what a variety will do when taken from one district into another where climatic conditions and soils are very different. On the Pacific Coast there is a greater tendency toward self-fertility than in the East, although varieties in the self-sterile group under Eastern conditions and quite self-fertile on the Coast have the quality and form of the fruit improved by crossing. Generally speaking, on the Pacific Coast little or no attention is paid to the Bartlett so far as fertility or sterility is concerned. It regularly sets heavy crops of well-sized fruits with its own pollen. On the other hand, such varieties as Comice and Nelis are completely sterile to their own pollen in the Rogue River Valley, all statements to the contrary notwithstanding. As stated before, the matter of self-sterility and self-fertility should be worked out for the various varieties in each particular district. I have worked this problem out for the Rogue River Valley, and since the data have been published else-

where I shall not burden the reader with it here.

While volumes might be written on how to prune the pear, the whole principle of pruning may be stated in a single short sentence—use the open head, no matter what variety. In such varieties as tend to grow very upright, they should be pruned so as to throw them more open, while the reverse should be practiced to a certain extent on straggling or spreading varieties. The tree when set out should be headed back so as to stand 18 to 24 inches high. After the first year's growth, the frame limbs should be selected and headed back to 12 or 14 inches. During the growing season, if the trees are making extreme growth and producing too many shoots it is well to pinch back or trim out those that are in excess of the needs of the tree. If the season has been such that the trees have made little or no growth, the shoots should be headed back to a single bud so as to start a new frame of vigorous shoots. The successive years' pruning should be such as to continue the open head, and by shortening in to not over eighteen inches for each cut, stiffen up the body and framework. The frame or scaffold branches need not be pruned of all the lateral shoots. Those to the inside and some on the outside should be removed, but a few may be left as temporary fruiting branches which, by heading in, will readily develop fruit spurs. Fruit borne on these temporary fruiting branches will hang close to the tree and will not have a tendency to throw the tree out of shape, which so often happens where the first crop is

borne somewhat above the scaffold limbs. By means of the temporary fruiting branches trees are brought into early bearing, and at the same time no fruit spurs need be permitted on the body or scaffold limbs. The reason for keeping fruit spurs off from the heavy wood is to prevent dangerous body infections of pear blight. Should infection occur on a temporary fruiting branch it is easily removed before any damage is done to the body of the tree. Pears reach the bearing age, under proper care, earlier than do apples, and once in bearing pruning will not have the tendency to throw them out of bearing as it will in apples. However, severe heading of such varieties as Bosc and Comice is not advised; as a matter of fact after they reach the age of five or six years it is best to withhold all pruning for two or three years, save the thinning out of crossing or interfering limbs.

The details of cultivation, fertilization and cover cropping need no extended discussion. To grow fruit of quality demands all that good agricultural practice has taught in the production of other crops; in other words, the pear demands scientific agriculture. Unthrifty trees cannot produce luscious fruit; however, it is not good practice to over stimulate the trees for the reason that they are then much more susceptible to serious injury from pear blight should infection occur. It will be easy for the pear grower to judge whether or not his trees are making sufficient new wood. It will also be easy for him to note by the appearance of the foliage the lack of soil fertility.

Pear growing in the United States is generally on the decrease, the reason for this being pear blight. Many districts that were once known for their heavy pear shipments are now without a single pear tree. In the East we find that southward from the region of the Great Lakes the growing of the better varieties of European pears has been largely abandoned, and to a certain extent we find growing in their stead the two or three Oriental hybrids spoken of elsewhere in this paper. Of course, large quantities of pears are produced in the East, but for the most part they do not compare in quality with the standard varieties grown on the Pacific Coast. This fact is evident from the great difference in price between the Eastern and Western product. While the East and Middle West have suffered much from the ravages of pear blight, many large districts in the West have also had their share of trouble. In some states entire districts have been wiped out, and it is known that in one state only a single pear orchard of about 500 trees remains. The only district on the Pacific Coast which has not only held its own but has actually increased its pear acreage and production is the Rogue River Valley in Southern Oregon. The rate of increase may be shown by the carload shipments made in 1911, 1912 and 1913, which were respectively 125, 250 and 500 cars (1913 crop estimated). Pear blight has been known to be in the district since 1907, so that the growers have had to contend with it for seven seasons. It would seem that some very good work has been done in the control of this disease, as the increased shipments demonstrate. When pear blight came into the Rogue River Valley from the California districts the growers, finding it impossible to get any help from their own state institutions, appealed to the federal government for aid, which was immediately forthcoming. After the United States Department of Agriculture had demonstrated the control of blight the growers, feeling the necessity of continued supervision, established a county pathologist's office, the first of its kind in the United States. This office continues the work first undertaken and carried to success by the Department of Agriculture. The fact that pear growing is on the increase in the Rogue River Valley is due to the efforts of the growers themselves. When they found that there was no possibility of getting help within their own state they immediately set out to help themselves.

It has been stated frequently that pear blight is a disease of pome fruits on the American continent; however, it is now known that the disease has secured a foothold in Europe. It has been reported from at least three countries in Europe, and while it has not yet shown great virulence we are anxiously awaiting what will likely happen when the disease reaches the fine pear districts of Holland, Belgium and France. Now that the disease is in Europe, and will likely spread to the



Anjou Pear Trees in Full Bloom. Holloway Orchard

better pear sections, we should more than ever feel the necessity of guarding our pear interests in the better pear-growing sections of the United States; for pear blight anywhere usually means reduced acreage and reduced crops—therefore higher prices. Undoubtedly the countries of Europe will make every effort to prevent the spread of this disease, but the disease being new to them, and not being fully understood by them so far as control is concerned, will mean that there must be some loss once the disease enters a district.

Does pear growing pay? Does it pay to control pear blight? Aside from pear blight, the pear tree is troubled less by insect and fungous pests than is its near relative, the apple. Furthermore, blight is no more severe in the more susceptible varieties of pears than it is in many varieties of apples, notably Spitzenberg, Alexander, Transcendent Crab and many others. The question as to whether it pays to control blight may be easily answered by giving the average prices over a six-year period for pears shipped from the Rogue River Valley. The prices given are those obtained through the association as well as by individual growers, and represent f.o.b. averages for the first and second grades. The average prices received during the years 1907 to 1912, inclusive, are as follows: Bartlett, \$1.35; Winter Nelis, \$1.65; Howell, \$1.95; Bosc, \$2.30; Comice, \$2.45; Anjou, \$2.50.

All apple growers throughout the Northwest know what it costs to raise a box of apples, and, taking everything into consideration, we have found that it costs somewhat less to raise a box of pears.

The future of pear growing in any district will depend upon the ability of the growers to control pear blight. If they are unwilling to co-operate and

carry out the work of eradicating the disease, which is the only method of control, it will be just as well for them to pull out their pear trees and have the agony over. For the district which will control pear blight the disease may be considered a blessing in disguise. Owing to the fact that the pear is very prolific and is otherwise very free from troubles, if there were no such disease as pear blight pears could be produced in such enormous quantities that there would be no profit in growing them. But blight will continue to keep the production limited, and there will always be a handsome profit in pears.

Two Dollars and Ninety-One Cents Per Crate

The Yakima Valley Fruit Growers' Association, which is now affiliated with the North Pacific Fruit Distributors, has just made its returns to the Kennewick and Richland strawberry growers for 12,578 crates. The 8,241 crates of extra fancy netted the association \$3.61 a crate, a total of \$29,756.23. The fancy grade included 418 crates, \$791.91, an average of \$1.91. The balance went to the canneries, 3,918 crates, \$6,100.13, an average of \$1.65. This makes a total of 12,578 crates at \$2.91, or \$36,648.27.

Officers Elected

The following officers were elected for the Wenatchee-North Central Fruit Distributors, an auxiliary of the North Pacific Fruit Distributors: D. W. Roderick, president; O. G. Fish, vice-president; C. S. Garrett, secretary, and Joseph Schons, treasurer. Mr. Roderick has been selected as local representative on the board of trustees of the Distributors. This will give Wenatchee representation at the proceedings and deliberations of the Distributors.

The Possibilities of a Good Cheap Common Storage Plan

By D. E. Lewis, of Department of Horticulture, Kansas State Agricultural College

THE possibilities of good common storage for the apple crop and the profit that a good storage room might enable the grower to secure are often neglected. A good storage room would enable many growers to supply a local market for a large part of the apple season. Many small towns in orchard districts are poorly supplied with apples during the winter months because the growers depend upon the commercial storage houses, which are located only in the larger towns. The cost of handling and shipping to and from storage may be saved in many cases by providing storage rooms that are clean and well ventilated and in which the temperature may be well controlled. In seasons of heavy crops



there is often a glutted market during the fall months and a good demand a few weeks later. This demand the local grower should plan to supply.

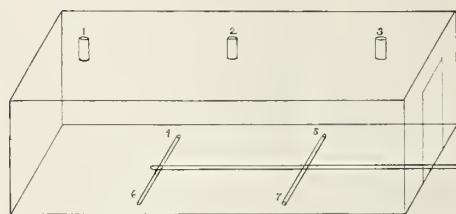
The first requisite for successful storage is clean, sound fruit, picked before it begins to soften, carefully handled and placed in storage with as little handling and delay as is possible. The grower should take every advantage of cool nights to get the temperature of his room as low as possible, closing all openings when the temperature outside is higher and opening when the outside temperature is lower than it is inside. Fruit picked on a hot day may well stand in the shade until the next morning, when it will usually have cooled a considerable number of degrees.

In the fall of 1911 the Horticultural Department constructed an outdoor cellar for the storage of fruit, and in selecting the site for the storage cave, and also in its construction, an effort was made to provide for good ventilation and a constant temperature. A northeast slope having a fall of about two feet in ten was available and offered an advantage both in construction and in temperature. Excavation showed a ledge of rock at such a depth that it would furnish a solid foundation and was used for this purpose, a rather thin coating of concrete being run over this in order to form a smooth floor and to exclude moisture. Since the completion of the cave it seems that the rock ledge upon which the cave was constructed offers a disadvantage, as the lack of subsoil drainage causes wet soil in contact with the cave walls, and under these conditions enough moisture

passes through the concrete to cause the formation of drops of water on the interior of the walls.

Storage experiments have established the fact that good ventilation, especially for a short period following the placing of fruit in the storage room, is one of the most important factors governing its keeping. With this in mind, a system of ventilation was planned which would allow for ample change of air during the time it was most needed, the intention being to regulate the ventilators according to the needs of the storage room. An eight-inch tile was placed under the floor of the cave and laid as for ordinary drainage, opening at a distance of fifty feet from the storage room. This exterior opening was covered with a heavy wire screen to prevent small animals from entering. This tile was placed about two feet under ground and had sufficient slope to serve as a drain from the cave as well as a ventilator. Under the cave floor the eight-inch tile was connected with two four-inch cross tiles. By means of elbows these four-inch tiles were brought to the surface of the cave floor, making four openings, located seven and one-half feet from the ends of the cave and two feet from the side walls. In order to complete the ventilation three ten-inch tiles were imbedded, flange down, in the roof. Covers were provided for these tiles by nailing boards together "A" shaped and leaving the ends open. In this way water was excluded, but the passage of air was not materially lessened. One tile was placed in the center of the roof and the others three feet from either end, all being located in a line, dividing the width into equal parts. By this arrangement the upper ventilators were placed in position to draw the air entering below through the entire area of the storage room.

A good draft was secured at all times, starting immediately upon the closing of the cave door and being especially strong when the temperature of the cave was above that of the air outside. The following diagram indicates the manner of locating the ventilators. 1, 2, 3 are the upper ventilators and 4, 5, 6, 7 the position of the lower ventilators in the floor of the cave. 8 is the eight-inch tile connected with the lower ventilators.



The cave was made twenty-four feet long, twelve feet six inches wide and seven feet high, inside measurements. The side walls were eight inches in thickness, of concrete made of one part cement, three parts of sand and five parts of crushed stone. The inside of these walls received a finish coat one-half inch thick of one part cement and one part screened sand and troweled smooth with a steel trowel. The slab forming the top of the cave was made eight and one-half inches in thickness, of concrete made of one part cement, two parts of sand and four parts of crushed stone, reinforced with five-eighths inch square twist bars, spaced four and one-half inches on the center and imbedded three-fourths inch above the bottom of the slab. The floor was made three and one-half inches in thickness, as follows: Base, three inches in thickness, made of one part cement to four parts of sand, and the top coat one-half inch in thickness, made of one part of cement and one part of screened sand and troweled smooth with a steel trowel. The top

TABLE SHOWING THE TEMPERATURE IN DEGREES FAHRENHEIT BY THE WEEK FOR THE STORAGE SEASONS 1911-12 AND 1912-13

1911-12				1912-13			
Week ending	Outside Temperature			Week ending	Outside Temperature		
	Max.	Min.	Av.		Max.	Min.	Av.
Sept. 7	98	58	78	Sept. 7	100	66	83
Sept. 14	104	60	82	Sept. 14	102	54	78
Sept. 21	93	45	69	Sept. 21	82	35	58½
Sept. 28	79	52	74½	Sept. 28	80	29	54½
Oct. 5	85	43	64	Oct. 5	90	26	58
Oct. 12	85	42	63½	Oct. 12	82	36	59
Oct. 19	82	34	58	Oct. 19	80	32	56
Oct. 26	72	29	50½	Oct. 26	79	26	52½
Nov. 2	47	15	31	Nov. 2	85	22	53½
Nov. 9	65	21	43	Nov. 9	74	28	51
Nov. 16	71	6	38½	Nov. 16	72	28	50
Nov. 23	65	22	43½	Nov. 23	70	17	43½
Nov. 30	63	5	34	Nov. 30	62	16	39
Dec. 7	58	20	39	Dec. 7	61	16	38½
Dec. 14	52	20	36	Dec. 14	59	9	34
Dec. 21	44	23	33½	Dec. 21	53	12	32½
Dec. 28	42	5	23½	Dec. 28	56	12	34
Jan. 4	32	-5	13½	Jan. 4	56	17	36½
Jan. 11	28	-14	7	Jan. 11	58	-28	4
Jan. 18	40	-19	10½	Jan. 18	58	-14	22
Jan. 25	53	5	29	Jan. 25	60	8	34
Feb. 1	55	10	32½	Feb. 1	68	4	36
Feb. 8	40	-2	19	Feb. 8	40	0	20
Feb. 15	52	9	30½	Feb. 15	60	11	35½
Feb. 22	56	16	36	Feb. 22	76	10	43
Feb. 29	50	-3	23½	Feb. 29	35	-15	10
March 7	38	0	19	March 7	67	-7	30
March 14	35	0	17½	March 14	63	15	39
March 21	61	10	37	March 21	69	10	39½
March 25	57	17	37	March 25	72	20	46

contained the three tile ventilators and the bottom four ventilators as previously described, and the front contained a door four feet by six feet. This door was made in two sections, having a dead-air space of four inches between them. Each section was made of two thicknesses of flooring nailed together at an oblique angle after the manner of an ice-house door. This cave was constructed by contract and cost complete, not including excavation, approximately three hundred dollars. Where sand and stone could be easily obtained a fruitgrower could probably construct a similar cave for a less price.

Results of 1911-12 Experiments.—The construction of the cave was delayed owing to weather conditions and the slowness in setting of the concrete, and the fruit could not be placed in it until the latter part of November. The apples were picked and packed as they ripened, and for want of a better storage were placed in tents in the orchard. Hay and straw were used for insulation, but it was impossible to attain anything approaching a storage temperature. Unseasonable cold weather during the middle of the month made it necessary to use stoves in the tents to prevent the fruit from freezing. At other times the temperature was considerably too high. Under these unfavorable conditions occasional instances of soft rots were observed, being so severe in some cases that boxes had to be opened and the fruit resorted. The prediction of near zero weather made it seem best to place the fruit in the cave the last of November, even though the concrete was not yet entirely cured. The temperature at that time within the cave was 40 degrees Fahrenheit and was gradually lowered during the next four weeks until a storage temperature of 32 degrees was reached, and retained with little variation the remainder of the season. The fruit was frequently examined during the months of December, January, February and March, and

was found to be in almost identically the same condition as when placed in storage. The moisture from the green cement caused a slight molding of the boxes near the walls, but even in these boxes the fruit did not decay. When such a box was opened the apples had a musty smell and taste, but after standing in the open air for a time this disagreeable odor was little noticed. The last of the fruit was removed and sold during the latter part of March and its condition was such that few boxes required resorting. Approximately eight hundred bushels had been carried through the winter with less than five per cent loss, a remarkable result considering the condition of the fruit at the time of storage.

Results of 1912-13 Experiments.—During the latter part of the summer of 1912 a cave corresponding in every detail to the one constructed in 1911 was made. It was located directly in front of the first cave and was used especially for the storage of windfall and inferior apples and for potatoes. Both caves were ready for use by the time the fall apples were ripening, and although the temperature was not low it was gradually reduced until by the middle of December is reached 33 degrees Fahrenheit, and thereafter was retained fairly constant until the first of March, when the fruit was sold. Considerable more care was necessary in reducing the temperature of the two caves than had been required for the first, but after the proper degree was reached it was retained without difficulty. Some trouble was again experienced with moist walls, drops of water occasionally forming on the walls of the rear cave, due to its passing through the concrete from the wet ground outside. The new cave was much drier, due probably to better drainage of the soil surrounding it. About twelve hundred bushels of fruit were stored in these two caves during October, and over seven hundred bushels of this amount were carried until the first of March. A little greater loss

was experienced in the fruit carried through the entire season than resulted the year before. A large per cent of loss was experienced in the bruised and inferior apples stored in the new cave, and occurred early in the fall before the best storage temperature was secured. The table herewith shows the temperatures within the cave and the corresponding outside temperatures for the same week during the storage seasons of 1911-12 and 1912-13. It will be observed that the maximum and minimum temperatures are recorded by weeks, beginning with September first, or in the case of the cave temperature for 1911-12 beginning with the placing of the fruit in storage, and continuing through the storage season, or until the fruit was removed from storage.

It appears from the experiments of the past two years that fruit can be successfully kept from the time of glutted markets in the fall until a more favorable selling time in a well constructed cave. Under favorable conditions and by careful regulation it seems possible to carry a good grade of hand-picked apples until the first of March or later without serious loss. If the storage cave is located near the house, so that it may receive constant attention, a storage temperature of 35 degrees or lower can be secured by the first December, and frequently much earlier than that. To secure this temperature the cave door must be opened each night that the temperature drops low and closed again early in the morning. Several cold nights are required before a constant low temperature can be secured as the cave walls, being considerably above the temperature of the air admitted, will cause a gradual inclination to return to the original temperature. Constant, careful attention should be given the cave in order to have it about 40 degrees when the fruit is ready for storing and to lower the temperature to 32 degrees or slightly lower within the following two or three weeks. If the cave is well banked little trouble will be experienced in retaining a low temperature after it is secured. Fruit kept in a cave usually remains more firm than when stored in a dry place; too much moisture, however, is to be avoided. By constructing the walls in such a manner that they will contain a dead-air space of two inches or more, it has been suggested, might eliminate this trouble. Good drainage around the cave is of great importance, both for the surface and subsoil. The surface waste can be run off by means of shallow ditches on either side of the cave. The advantage of this storage cave over those ordinarily in use is largely in the method of ventilation. Such a cave could be used not only for apples but for Irish potatoes and vegetables as well. The potatoes stored with the apples in these experiments kept well and indicate that further experiments along this line would be desirable.



Exhibit of North Pacific Fruit Distributors of the International Apple Shippers' Convention
Cleveland, Ohio, August 6, 1913

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The Evaporation of Apples

By Professor C. I. Lewis, Oregon Agricultural College, Corvallis, Oregon

ONE of the greatest problems confronting our fruit growers is to determine what to do with our lower grades of fruit. A considerable amount of this fruit has heretofore been made into vinegar, but there is a limit to the amount of vinegar that is consumed. Canning factories and jell works are using ever-increasing quantities. Another way in which such fruit can be utilized is in the evaporator, and as yet the fruit growers of the Northwest have given this subject very little attention. In some sections of the United States, especially in New York and Arkansas, this business is assuming tremendous proportions. In some cases all the fruit of the orchard is used for the evaporator, but in many cases only the lower grades are used. There are a few men in the Willamette Valley who are successfully evaporating apples. With the opening of the Panama Canal there should be an inducement for many more to go into the business, as there is a large export trade in dried apples. It will be found feasible in some cases to combine the evaporator with the cannery and jell works.

In many sections we would not need to build new structures, as our prune dryers and hop dryers could be utilized for this work. Where one would desire, however, to undertake the work on a large scale, a kiln dryer would be the most satisfactory type to build. In

planning such a building one should make reservation for the following: Room for the receiving and storing of fruit; ample room for such machinery as paring tables, paring machinery, slicers, conveyors, etc.; several rooms for drying; a sweating room, and accommodations for storing and packing of the product. In the basement room will have to be made for stoves. Stoves similar to our hop stoves are generally satisfactory. Some of the most efficient buildings are two stories, such buildings allowing for the easy manipulation of conveyors and labor-saving devices.

As regards the apparatus for an evaporator, the growers can obtain splendid ideas from supply catalogues. The price and capacity of the machinery varies tremendously. Among the apparatus that is desirable are paring tables and machines for paring, quartering and slicing. Endless belts and conveyors should be used for carrying fruit from the tables to the bleachers and kilns. These can be so arranged as to conduct the slices to one room and the parings, trimmings, cores, etc., to another. Chutes can be used in transferring the fruit from the kilns to the sweating room.

The best fruit to use is mature fall and winter apples. Summer fruit and unripe fruit dries down too much. Unless the fruit is fairly high in sugar content it will dry down very light. There are many varieties used for evaporating. As far as the Northwest is concerned, the Spitzenberg is one of our most desirable varieties, as it is high in quality and gives a nice white product. The Russet is prized in some sections of the country because of its whiteness and heavy proportion of dried fruit to fresh. However, the Russets are not of commercial importance on this Coast. Commercial varieties that are grown on this Coast that are used extensively are Baldwin and Ben Davis. Other varieties that are used in some sections of the country are Northern Spy, Greening, Fall Pippin and Limber Twig.

As soon as the fruit is pared it is trimmed and then sent to the bleachers. It is desirable to have the fruit in the bleachers as soon as convenient after paring. The aim in bleaching is to remove whatever discoloration has occurred and also to prevent further discoloration. It takes on an average about an hour to bleach the fruit. The fruit is then cored and can be used either whole, sliced or quartered, according to the condition of the fruit and the market demands. The fruit is then sent to the dry kilns. These kilns are air-tight rooms into which hot air is conducted from the furnaces. The fruit is spread on the floor of the kiln from four to six inches deep. The floor should have previously been treated with some substance such as tallow to keep the fruit from sticking. At least



Banquet of International Apple Shippers' Association, Cleveland, Ohio, August 6 to 8, 1913

once in two hours the fruit should be turned. The temperature used generally starts at about 150 degrees and is gradually allowed to drop to about 120 degrees. When apples are dried in prune dryers it is very necessary to watch the fruit carefully to keep it from burning and sticking. The amount of time necessary to dry the fruit will vary according to the amount of heat used, the variety and condition of the fruit, and whether the fruit is dried whole, quartered or sliced. On an average whole fruit will require about thirty-eight hours, being about the same time used for our prunes. The quarters will take about half the time; while the slices will need about twelve hours. After the fruit is dried it should be placed in the sweating rooms until it all becomes of a uniform condition as regards its moisture content. The fruit is generally shoveled over frequently in the curing room.

All the waste of the evaporator should be saved. If jell vats are handy, the refuse, such as peelings, cores and trimmings, can be made up immediately into jell. Frequently such waste is used for vinegar manufacture. Where they can be neither used for jell nor vinegar they should be dried, and it is advisable to provide special bleachers and drying kilns for these products. There is a good market for all the waste products. These dried products frequently go under the name of "chops," and are exported in large quantities to Europe. There they are used in the manufacture of champagne, brandy and in the fortifying of wines. They are also used for the manufacture of jells, apple butter, etc. The peelings especially are good for jell. There is another product which occurs in large quantities, and this is the broken pieces. These are often sold for the manufacture of pies. Where the grade of fruit is running especially low it is sometimes necessary to throw most of the product into the chops. These small, imperfect apples are generally sliced without being pared or cored. They can be handled very cheaply in this way.

The amount of dried products that one can obtain will depend upon a number of factors, such as the variety and the maturity of the fruit. Probably a fair average would be from five to six pounds of good grade output. There will be in addition from two to four pounds of chops, waste, etc., so that one can count on from nine to ten pounds to the bushel of total output. The fruit is graded and the terms used for our boxed apples are frequently used for the dried product; such terms as "choice," "extra fancy," "fancy" and "prime" are very commonly used. The fruit is generally packed in wooden boxes, which vary in weight. The fifty-pound box is the one most commonly used. Smaller boxes, however, especially the twenty-five-pound box, are popular, and cartons are sometimes used. Most of our Western fruit growers are familiar with the way our Italian prunes are prepared for market. The dried apples are put up in much the same way. The boxes are generally

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faced, and on the better grades lace paper is used to advantage.

There is still a considerable work to be done in dried apples in standardizing the product, and doubtless in the near future an attempt will be made to establish standards, as the general trend with all dried fruits at present is to

attempt to standardize, and this is certainly a move in the right direction.

In one respect, the great bulk of the dried apples in the country is handled very similarly to our prunes. Very few of the evaporators do their own packing, the packing and grading being very largely done by buyers and dealers.

"BLUE RIBBON"

(EXTRA FANCY)

"RED RIBBON"

(STANDARD)

Famous Brands of Yakima Apples

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Yakima County Horticultural Union

E. E. SAMSON, Manager

NORTH YAKIMA, WASHINGTON

The prices paid vary in about the same way as the prune prices do. Supply and demand have, of course, a bearing on the product. The price paid for fresh fruit has much to do with that realized for the dried product, but at times there seems to be no very good reason for certain prices. The price paid depends to a large extent on the condition of the fruit. Some of the low grade waste sells as low as half a cent a pound; chops from three-fourths of a cent to two cents, and boxed fruit from four cents to twelve. The latter price, however, is abnormal. However, at the prices paid there is a field for the evaporated apple industry in the Pacific Northwest.

air. Never plug up the barrels until the vinegar process is complete. Never pour in hard cider or old vinegar into the new cider. Such mistakes always lead to failure.

The average farmer keeps his apple juice too cold. If the juice is kept at 40 to 50 degrees it will take months, perhaps years, before the vinegar process is completed. If you can keep the juice at from 60 to 75 degrees the fermentation will be completed in three months. Addition of a dissolved yeast cake to every four to six gallons of juice will help hasten fermentation. After the fermentation is complete

draw off the liquid into new barrels. Be sure these are clean. This is the proper time to use the old vinegar, filling the barrel about one-fourth full of the old vinegar and then pour in the new vinegar until the barrel is about two-thirds full, but never fill the barrels full. Do not drive in the plugs at this date, but simply use cotton plugs. A little vinegar mother put on the top of the vinegar at this stage will help materially. This can be made by taking equal parts of old cider or hard vinegar with new vinegar, putting it in a crock behind the cook stove. In a few days mother will form on top of the liquid and this can be placed in the barrels. Here again the temperatures are generally kept too low. If you have a temperature of 50 degrees it may take two or three years before you have good vinegar. Two years is as short a time as you could hope to complete it at this temperature. At 65 or 70 degrees you could shorten this very materially.

As soon as the vinegar is made, fill full and plug barrels tight. Do not make a mistake in this, as flies and insects get in.

Some other reasons for poor farmers' vinegar is that often it contains too much water. This is especially true if the pumice has been washed and such washes have been used for the vinegar. It is nothing uncommon to find that preservatives have been used. If preservatives have been put in at all, it will probably be impossible to make good vinegar from the solution.

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Vinegar Manufactures' Failures

Many of the farmers and fruit growers who attempt to make vinegar have become discouraged and seem unable to produce a good product. From inquiries that we have received and investigations we have made we have found that the failure of the orchard men in trying to make vinegar is due in most cases to some of the following reasons:

In the first place, the wrong kind of fruit is often used. Unripe, rotten and dirty fruit will not make good vinegar. The best vinegar comes from fall and winter apples that are mature. If your apples are green, leave them until they have matured and ripened. Green apples contain too much starch, and rotten apples give a bad flavor.

Poor barrels are responsible for failures. You must never use dirty barrels or barrels that contain odors which may give flavors to the juice. Barrels should be thoroughly steamed and cleaned. Never fill the barrels full of apple juice. Only fill them about two-thirds full. You must have plenty of

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The Range with a Reputation

It Should Be In Your Kitchen

The Formation of Fruit Buds

By E. F. Stephens, Nampa, Idaho

IN Southern Idaho apple trees in commercial orchards may be pushed with such vigor as to be strong enough to yield fruit of commercial value the fourth, fifth and sixth season. The Rawlings orchard, within the town limits of Nampa, yielded six boxes of Rome Beauty apples on single trees while making the sixth season's growth. In the Yost orchard, near Meridian, Jonathan apple trees, one thousand in number, averaged one box per tree during the fourth season's growth, three boxes per tree the fifth season's growth, and four boxes per tree the sixth sea-

son's growth. Such yields are a material help in paying the running expenses of the young commercial orchard.

How shall we cultivate, prune and train our young orchards to secure similar results? Fruit buds are first formed as leaf buds and later in the season they are changed, under right condition, into flower or fruit buds. These buds are not structurally distinct. Under high cultivation, with plenty of plant food and moisture, the apple tree naturally grows strongly to wood. The buds usually remain as leaf buds. To change leaf buds to fruit buds requires such method of pruning as shall force the development of fruit buds, or a lessened amount of moisture acting as a check to the too vigorous growth of the tree will cause a certain proportion of leaf buds to change to fruit buds. A label wire accidentally or carelessly left on a limb, constricting the flow of sap and threatening the life of the limb, will force the formation of fruit buds. Nature always attempts to reproduce seed and fruit. Anything which threatens the vigor or life of the tree will tend to change leaf buds to fruit buds. Cultivation, or lack of it, in the last half of the season has an important in-

fluence in determining whether the tree shall make rank wood growth or shall be so checked in its vigor as to form a due proportion of fruit buds. During spring and until midsummer the cultivated orchard having plenty of moisture and plant food grows leaf buds only. The normal time for the development of fruit buds is from early July until October. Professor Goff of Wisconsin, by the use of microscopic photography, demonstrated that in the climate of Wisconsin fruit buds were formed and continued to develop until October. Formation of fruit buds in

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300-candle power light 50 hours from one gallon of kerosene; no wick; no odor; no sub-flame.

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WHEN WRITING ADVERTISERS MENTION BETTER FRUIT



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THE STANDARD OF EXCELLENCE
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the climate of Wisconsin usually began in July. Under Northern conditions the orchardist (commercial) prefers to have what is termed the wood growth of the tree checked and the trees begin to ripen in July, so that growth of the season may be perfected before the first severe autumnal frost. In Southern Idaho our seasons are longer, and in our young orchards we may safely prolong the season of vigorous growth. Our orchards should set terminal buds by September first and be completely ripened in the early days of October. For a tree to be unripe when the first severe autumnal frost is due endangers the health and vigor of the tree.

Cultivation should cease by late August or early September. Irrigation in the growing of the young commercial orchard may end with July or early

August. Following irrigation tillage should be so thorough and complete as to reproduce the loose surface needful to carry the trees safely until the end of the season.

Continued in next issue

Horticultural By-Products Courses

The interest in horticultural by-products at the present time is very keen. The agricultural colleges and experiment stations are feeling this interest and are making preparations to handle the work. We note that the Division of Horticulture of the Oregon Agricultural College is trying to meet this problem, and this year, for the first time, four courses in by-products work are outlined in their catalogue. The first course, Horticultural By-products, deals with the establishment of plants, their

operation, and the fundamental principles in connection with canning, evaporating, drying and the manufacture of fruit juices. In addition, three other special courses are offered, one in Dried Products, one in Canning and one in Fruit Juices. Such courses will mean a great deal to the fruit growers of the state in enabling them to obtain information which otherwise it would be impossible to obtain.

The manufacturers of berry boxes will hold a meeting in Portland, Oregon, October 22, at the Hotel Oregon, to determine upon standard dimensions for berry boxes, as required by law in the State of Washington after March, 1914.

Baker-Langdon Orchard Begins to Bear

The famous 500-acre Baker-Langdon orchard will ship between 8,000 and 10,000 boxes of apples this year. It is one of the many large young apple orchards which will soon put the Walla Walla Valley on the map as one of the large apple-producing sections of the Northwest. This orchard was set to Rome Beauties and Jonathans. Next year the balance of the orchard will begin to bear.

Growers who have Apples and Pears to Market

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MANTLE LAMP CO., Aladdin Bldg., Portland Ore.

The individual who wants an excellent book of desserts can secure the booklet, "209 Ways of Serving the Apple for Table Use," by addressing Miss L. Gertrude Mackay, Pullman, Washington, sending twenty-five cents. The dessert for dinner is always a problem. This book will help you. The more apples you eat the healthier you will be, and the more apples you consume the better the grower will be pleased.

Hood River will produce about 800 cars of apples. Among the principal varieties are Spitzenberg, which is taking on good color and fair size, the Newtown, Ortle and Arkansas Black.

Bartlett pears generally in the Northwest brought from \$1.25 up to as high as \$2.00 per box. The earlier part of the season commanded better prices than the latter part of the season.

The North Pacific Fruit Distributors during the third week in September sold 1,000 cars of apples, averaging about \$1,000 per car, carrying in price from \$1.25 to \$2.00 per box.

Southern Oregon has sold the Bartlett pear crop, the bulk of the crop going through the Northwestern Fruit Exchange and bringing excellent prices.

Montana will have a nice crop of McIntosh Red. They make a specialty of this apple, it being suited to their soil and climatic conditions.

Wenatchee reports an excellent crop of Winesaps, Rome Beauties, Jonathans and Spitzenbergs. Quotations are being made on all varieties.

Yakima Valley reports a good crop of Winesaps, Rome Beauties, Spitzenbergs and Jonathans and many other commercial varieties.

Eastern Oregon and Washington are rather light in yield, but will produce a number of good varieties in moderate quantities.

Idaho's long suit in the apple business is Jonathans, Winesaps and Rome Beauties.



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No protective association working along the lines of a mercantile agency is perfect. Produce Reporter Company is not, but we have developed a high state of efficiency, and give the best service to be had.

This service is used by the most successful distributors of Northwestern products, but is cheap enough to individual operators or to small associations so that any reasonable sized carlot shipper can afford to have as good facilities for profitable distribution and protection as the largest distributing agencies.

Full details cheerfully furnished.

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Take advantage of storage in transit rate and the better market later. Write us for our dry and cold storage rate and information.

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Company**

Spokane, Washington

Marketing Prices This Year

We prophesy that a smaller crop of apples and a better system of marketing, with the standardization of packages, will be large factors in netting the growers much larger returns this year for their crop than last year.

Hood River has sold a large part of the Jonathan crop and also about 200 cars of Newtowns.

The apple crop of the Northwest will probably be about 65 per cent of last year's crop.

Wagener is one of the many good varieties grown in the Spokane country.

Winesaps are coloring up well as usual.

English Fruit Crop Prospects

"A disappointing season" is the summary of the English fruit crop prospects by the London Times of June 16. The apple yield will be much smaller than last year. The aphid blight on plums and apples, particularly the former, is one of the worst ever known in spite of repeated sprayings in many cases. The review concludes: "No one who has not walked over many of the great commercial fruit farms of Kent and other counties can form a fair conception of the disappointing results of the present season."

Make Money with Poultry!

AMERICAN POULTRY is a magazine devoted entirely to helping earnest men and women make a financial success of poultry raising. Its staff of writers is composed entirely of those who have made a practical, instead of theoretical, success of poultry farming, and who are glad to pass on the results of their hard-earned experience to AMERICAN POULTRY readers.

There are many pitfalls in the path of the novice which may be entirely avoided by those who will follow the teachings set forth in this magazine. It fully explains how to make a start, how to construct houses, coops and other devices, how to get a large egg yield, how to cure and prevent disease, how to exhibit, how to get the top price for eggs, how to use incubators, and hundreds of other points which everyone wishes to know. It explains the famous secret system through which poultrymen have become rich and afterwards sold for hundreds of dollars.

AMERICAN POULTRY is a large, handsomely illustrated, monthly journal, well printed on fine paper, and should be found on file in the home of every poultry lover. No beginner in the poultry business should think of being without it. It will save him many times the small subscription price. The advanced poultryman will also find it of great value, the articles being varied in their scope.

SPECIAL OFFER. The regular price of AMERICAN POULTRY is 50c per year, but in order to introduce it to several thousand new readers, we will, for a short time, give a large 200-page poultry book, which is a complete guide in the poultry business, **absolutely free** to everyone sending 50c for a yearly subscription or \$1.00 for a three-year subscription to AMERICAN POULTRY. A trial six months' subscription (without book) will be sent for 25c. Never has so much been offered for so small a sum. Advantage of this offer should be taken at once.

American Poultry

Savoy Building

Wilkes-Barre, Pa.

Products Made From Cider

Cider jelly is a very popular cider product. This has been used more in the East than in the West. To make really good cider jelly on an elaborate scale to be sold to the trade, it would be desirable and necessary to have some form of steam evaporator. For home use, the juice can be boiled down in kettles and pans, but it is more expensive. Apples for cider jelly should be clean, and only sound, ripe, mature fruit should be used. It is advisable to reduce the juice as soon as pressed. The sugar should be added to the cider before it is evaporated, and often about 100 pounds of juice is used to 20 or 25 pounds of jelly to be secured.

Apple butter is very popular with some people, and there are many formulas used. Most of them, however, are made by simply boiling together apples and cider until the mixture is boiled down to about one-fourth or one-third of its original volume. Spices are generally added to suit the taste of the maker. Cinnamon is the most common spice used. Boiled cider, sugar, and cider jelly are often added to the apple butter. After being thoroughly cooked the mixture is run through a colander, and should then be put up in crocks and sealed tight. It is better to prepare such mixtures in enameled and earthen vessels, as it is dangerous to cook them in metallic utensils, especially if kettles are of copper.

Canadian Apple Crop Prospects

Reliable reports from all sections of Canada indicate unfavorable prospects for an apple crop this season. In certain sections there will be no fruit, as orchards have been completely devastated by the tent caterpillar. The damage has been enormous, but definite figures cannot be given. It is estimated, however, that the total loss to the fruitgrowers of this section will amount to several hundred thousand dollars. The whole of Eastern Canada has been visited by this caterpillar plague, and not only have orchards and gardens been seriously damaged, but whole wooded areas of the country side have been devastated. The tent caterpillar is not a stranger to this section, but never before, it is said, have its ravages assumed such large proportions. In several instances recently they have been so numerous in their migrations across railways as to cover the rails for miles, causing delay to traffic.

Shipped 540 Tons of Cherries

The Dalles, Oregon, known as the "Cherry City," shipped this last season 1,080,000 pounds of cherries, or 540 tons. It is estimated that about 65 tons, packed in 10 and 25-pound boxes, were shipped to the retail market. The balance went to Portland and San Francisco, where the fruit was made into maraschino cherries.

The Newtown crop of apples will be shorter this year than any other of the commercial varieties which are grown extensively in the Northwest.

W. A. MURPHY

**Broker, Shippers' Agent
Car-Lot Distributor**

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This will be a box apple year in this territory.

I will handle several hundred cars within the next three months.

I sell F. O. B. on brokerage basis.

I also sell delivered and am in a position to make liberal advances on consignments, remitting for all shipments soon as sold.

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Write for particulars as to my marketing methods.



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This 4-acre, bearing, Commercial Jonathan Apple Orchard, joining the famous city of TWIN FALLS, IDAHO. The making of an ideal suburban home for an aged couple with small capital. Add poultry and small fruits for your living and figure the orchard a clear profit. Only a few minutes walk to High School (seen at left of picture) and business center. A rare bargain for quick sale and ready cash. Address, Owner, J. F. STOLTZ, Aurora, Illinois.



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All Communications Should Be Addressed and Remittances
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Postoffice at Hood River, Oregon, under Act
of Congress of March 3, 1879.

The editor of "Better Fruit" feels justified in asking you to read his article entitled "Information for the Consumer and Retailer," which is referred to elsewhere in the editorial columns. Many years ago the American Pomological Society issued a table of all the different varieties of apples that were known commercially, giving their rating in figures from one to ten, all of which would be very indefinite information for the average consumer, therefore it seemed better to express the eating and cooking qualities in three general terms, "excellent," "good" and "fair." Mr. Hamilton, of the North Pacific Fruit Distributors, in June issued a booklet, which is reproduced elsewhere in this edition, entitled "Suggestions and Tables for Fruit Growers." In this booklet is a table arranged alphabetically for the convenience of the grower and dealer, giving all the varieties of apples of the Northwest, their uses for marketing, dessert or cooking. It also gives the months of common and cold storage, with very interesting information as to the dates for picking in the early and late districts.

In January, 1912, a committee of the Washington State Horticultural Society issued a table, which appeared in "Better Fruit," of fifty varieties of apples, with much valuable information, giving the value as "dessert," "cooking" and "marketing" on a percentage basis, as well as showing the general range of sizes for each variety, all of which are excellent tables and masterpieces.

Some months ago Mr. Hutchins of White Salmon asked the editor of "Better Fruit" to prepare a brief article with a condensed table referring to the different features about the principal

varieties grown in the Northwest for Eastern and export trade. This article was prepared for Mr. Hutchins in August and was published in booklet form in September. The article, entitled "Information for the Consumer and the Dealer," has met with universal approval from all who have seen it. Hundreds of growers have suggested that something along this line should be written to educate the people about the principal varieties grown in the Northwest and their qualities in various respects. In view of all these facts, it would seem that all of the sources of information referred to in this article are entitled to credit, as well as many hundreds of growers who suggested the idea.

*Eat an apple a day,
Keep the doctor away.
Health's best way,
Eat apples every day.*

Mr. C. C. Hutchins, of White Salmon, Washington, has published a very interesting book called "Apple Talk." A few of the important articles are: "The Apple as Food," by J. A. Husik, M. D.; "How the Apple Should Be Purchased for Economy and Cared for in the Home;" "Curative Properties of Fruit," by J. H. Kellogg, Battle Creek, Michigan; "Information for the Consumer of Apples and the Dealer," by E. H. Shepard, editor of "Better Fruit." This article contains a list in their order of maturity of sixteen of the principal varieties grown in the Northwest. This table is arranged in convenient form, showing the eating quality, cooking quality, the months good in cold and common storage, flavor, size and color of apples, and the origin of each variety. The book also contains a number of recipes for serving the apple as dessert.

Picking Time.—Some months ago Mr. A. B. Steubenrauch and Mr. B. B. Pratt called at the office of "Better Fruit" and later Mr. H. J. Ramsay. Mr. Pratt is succeeded by Mr. A. W. McKay, who recently delivered a series of addresses throughout the principal apple sections of the Northwest. In giving these talks they displayed on the wall large charts to show the results of the keeping quality of the different varieties of apples picked early, at the right stage of maturity, and late pickings. These pickings being ten days apart. The result of the investigation as indicated by the chart showed very conclusively in actual percentage that immature apples did not keep as well as apples properly matured, and of course anyone knows that apples that are too ripe at picking time have already lost their keep. The main point to get at is the proper stage of maturity for picking. It seems a difficult task to express this in words. It is something that has to be learned by experience and observation; however, the general conclusion is that apples should show the right color of

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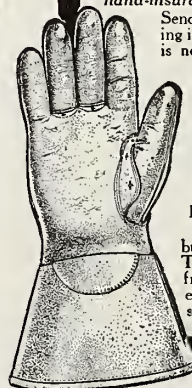
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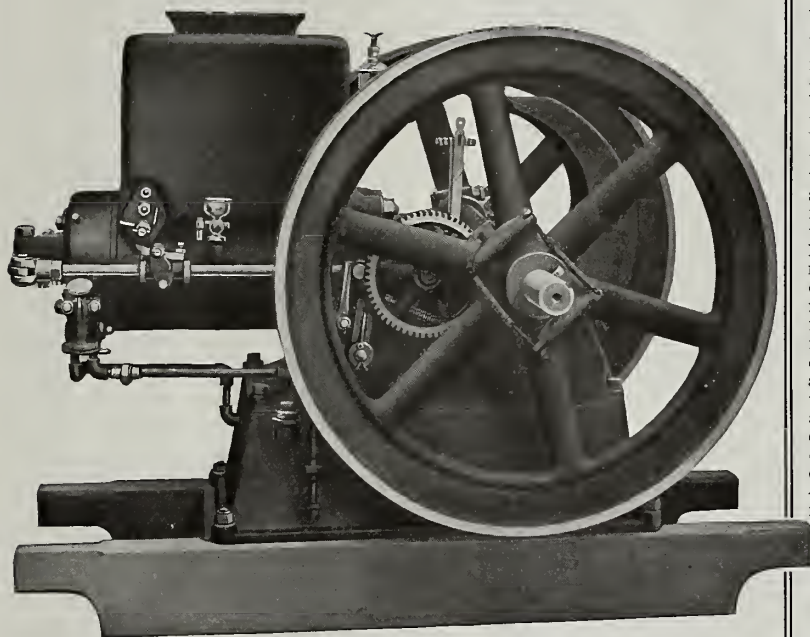
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This is of highest quality buckskin, strong and soft. The Farmer's Standby from every point of economy and service.





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if the Stover Engine had not been a crackerjack of an engine. A few could have been sold through advertising, but the thing that sold more than 3,000 Stover Engines throughout the Northwest is the goodness of the engine. Users of Stover Gasoline Engines do not hesitate to say that the Stover is the best engine on the market. It is this opinion in the minds of the owners that boosts the sale of this engine. Stover Engines have been tested out in every service and have been found wanting in none of them. They have strength sufficient to withstand the hardest knocks of timber service, the accuracy of adjustment demanded in an engine for electric generating, the ease of operation that adapts it particularly to the intermittent service of the farm or pumping. They meet every requirement—are simple and understandable. A single rod operates all important parts. Stover Engines are not of the hair spring type that are thrown out of adjustment at the slightest opportunity; they are of the sturdy, stick-to-it type that you can operate as well and as economically as an expert, and in case of an accident you can in most cases make repairs yourself, same as you would to any other piece of machinery about the place. We carry a complete stock of Stover Engines—sizes 1 to 60 horsepower—and also a complete stock of repair parts. Write us, if interested, for our catalog and circular containing letters from users in all parts of the Northwest.

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6,000 Boxes

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Growers who have large lots of apples
to dispose of will do well to write us

red among the red varieties, and the lighter colored varieties should show a mature condition and not be too green. The yellow varieties should be picked at the stage when the color shows the right kind of maturity. Some growers think the seeds are proper indication, but they cannot always be depended on. The right stage of maturity for picking is so difficult and hard to describe in words that the attempt is almost useless, but it is evident that every grower should give the matter attention and do a little experimenting for himself, seeking information, and learn the proper maturity and ripeness for each of the varieties which he grows, as much loss results in cold storage from either too late or too early picking. Big losses occur every year in the keep of apples in a commercial way by the delay in packing after picking. Every grower should aim to pack his apples rapidly after picking, and see that they are placed immediately in cold storage, if he expects them to stand up for a long period.

The American Pomological Society will hold a meeting in Washington, D. C., November 18th and 19th, to discuss many of the problems relative to the fruit industry. The week will open on the 17th with installation of exhibits. The 18th and 19th will be taken up with the American Pomological Society. On the 19th and 20th there will be a meeting of the Nut Growers' Association, and the 20th and 21st will be a joint

affair devoted to an extended discussion of markets and marketing relative to the fruit industry, in the interests of the growers, dealers and consumers from the Atlantic Ocean to the Pacific. This will be a wonderfully interesting and instructive week and every fruit grower who can find it possible to attend should not neglect to do so.

The Early Elberta is being spoken of very favorably in comparison with the old Elberta peach. A few samples sent to the editor certainly tasted mighty good and showed wonderful shipping qualities, having arrived in perfect condition by express from Utah, where they were grown.

It is reported from the East that the J. H. Hale peach is meeting with wonderful success and is commanding high appreciation from the consumer.

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The International Apple Shippers' Association, for the purpose of increasing the sale of apples by the right kind of publicity and advertising, have evolved what is known as the "Stamp Plan," which has been approved of by the wholesalers, retailers, associations and growers throughout the entire Northwest. Among those in the Northwest whose endorsements appear in the little book are The Wenatchee Fruit Growers' Association; W. F. Gwin, general manager of the Northwestern Fruit Exchange; Mr. W. K. Newell, president of the State Board of Horticulture of Oregon; Charles C. Hall, of Daisy, Washington, whose endorsement is rather original, reading as follows: "Hurrah for Success! I have just read "Better Fruit" for March, and nothing in it appealed to me so much as the Stamp Idea to advertise apples. Now should this proposition be carried out, I want to be advised, so that I may be the first one in this locality to put the stamps in active operation." Every dealer, every retailer, every association, shipper and grower should write Mr. U. Grant Border for the "Stamp Plan Booklet," which is free.

Every subscriber of "Better Fruit" whose subscription has expired should immediately renew, as the November edition will contain an index of every volume of "Better Fruit" from the first volume to the last. This index is arranged by volumes and double indexed, giving the names of the authors of the articles alphabetically with the article, and also the names of the articles alphabetically with the authors, referring the reader to the page number of each edition and the volume in which it appears. People who have been subscribers to "Better Fruit" for several years are aware of the fact that "Better Fruit" contains an immense amount of valuable information on all subjects referring to the fruit industry. Back numbers are practically exhausted. The only way that it will be possible to get this index is to subscribe to "Better Fruit" immediately.

Particular attention is called in this issue to the "Suggestions and Tables for Fruit Growers," published by the North Pacific Fruit Distributors, written by Mr. Charles L. Hamilton of North Yakima, Washington.

The October edition of "Better Fruit" is called "Keep It," or "Reference Edition."

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Vinegar and Sweet Cider
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Choice Hood River Apples**

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Land in the Pacific Northwest

With comparatively small capital and a fair amount of perseverance will produce results that will make you wonder why you did not purchase sooner.



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With its modern roadbed, its net-work of branches, its steel coaches, block signals, monster locomotives, courteous and efficient employes

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It maintains an agricultural department in charge of an agriculturist of long and practical experience, who keeps in touch with the farmers along its line and renders without charge any services necessary or possible.

It offers as incentives to good crops many prizes annually, and stands ready at all times to aid in locating prospective settlers and to give them the advantages of efficient service.

Write for booklet "Pointers for Practical Farmers"
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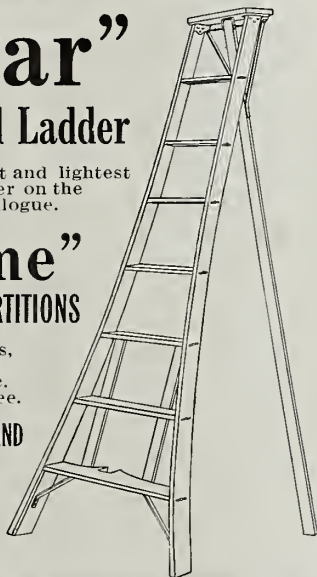
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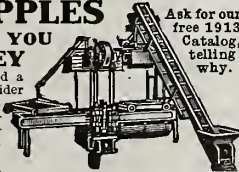


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Ask for our free 1913 Catalog, telling why.

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Solution

For Fall and Winter Spraying

The Old Reliable

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CLACKAMAS, OREGON

We are advised that the Northwestern Fruit Exchange is to have each of its affiliated organizations place a stamp on each box of fruit it ships. These cost one cent each and the entire proceeds will be utilized by the International Apple Shippers' Association to help pay for a world-wide advertising campaign. By the stamp plan the International Apple Shippers' Association hopes to raise \$250,000, to be expended in publicity for creating greater consumption of apples. Boxed apples will require a one-cent stamp and barreled apples a two-cent stamp. It looks as if the dealers and growers were getting together to create greater consumption.

"One Hundred Ninety-seven Ways of Serving the Apple as Dessert" can be purchased wholesale by retailers or wholesale dealers in thousand lots at a very low rate. This book is issued for the purpose of creating a greater consumption of apples. Every dealer and retailer should see that their customers are supplied, as the books are published at cost, which is very low, and can be purchased by writing Mr. U. Grant Border, 218 Light street, Baltimore, Maryland. Over half a million were sold in 1912.

The September edition of "Better Fruit," the "Pear Edition," was closed before some excellent articles reached us for publication. In this edition appears the article of Professor P. J. O'Gara, which was received too late for publication in September. Professor O'Gara was long connected with the government as pathologist, and is now employed by Jackson County, Oregon, as pathologist, entomologist and horticulturist.

The October edition, the "Keep It" or "Reference Number," is so valuable that we believe every subscriber should save this number, as our subscription list is increasing so rapidly that we will only have enough copies left to supply our regular subscribers and the new ones that come in during the month.

Everything is tending towards standardization, and the article by Professor C. I. Lewis, of the Experiment Station, Corvallis, on "Standardization of the Prune Industry," should be read by every prune grower, and will be found interesting to others.

"Formation of Buds," by Mr. E. F. Stephens, is an interesting article which will give much valuable information to many fruit growers.

Buy your apples by the box. It is better economy than buying by the dozen.

Attention of the apple dealers is called to the fact that nearly all of the different sections referred to in the editorials, in addition to the varieties of apples mentioned, produce a number of varieties—all the way from twenty-five to one hundred varieties, in greater or less extent.

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300 Candle Power

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Turns night into day. Gives better light than gas, electricity or 18 ordinary lamps at one-tenth the cost. A miniature portable lighting plant for every purpose. Makes its own light from common gasoline. ABSOLUTELY SAFE.

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King of Fruits

APPLE TALK



Recipes for

55 Ways to serve the Apple

READ AND PRESERVE

"APPLE TALK"

A New Booklet Just Issued to Aid the Orchardist and Dealer in Creating a Greater Publicity and Consumption of the Apple.

By C. C. HUTCHINS, White Salmon, Washington

This booklet has been prepared with great care after consulting recognized authorities of leading districts, heads of agricultural colleges, well known orchardists and others. In form it is most convenient in size. The front cover in its delicate color treatment by most modern process has for its center a beautiful red Spitzenberg apple with its stem and broken branch of green leaves; across top and bottom a narrow band in apple green, the top band bearing the motto "KING OF FRUITS," lower band to bear name of grower, association or railway distributing same. The contents consist of concise articles on the value of the apple from a health standpoint; how to purchase for economy; proper method of home storage; a charmingly written article titled "A Beautiful Tribute to the Apple"; a specially prepared article by the editor of "Better Fruit," Mr. E. H. Shepard, every word of interest and value to the grower, dealer and consumer, with an exceedingly valuable table covering the leading sixteen varieties of Northwestern grown apples, stating their characteristics, per variety, in the following order: Eating quality, cooking quality, months for using from common storage, months for using cold storage will include, flavor, size (as per range of pack), color, and origin of variety. Following above matter and closing the booklet are fifty-five choice and thoroughly demonstrated tempting recipes for serving the apple.

ITS PURPOSE is to create by world-wide distribution a greater consumption of the apple. The apple alone is featured; not a line of advertising permitted, aside from due credit given to compiler of the recipes.

ITS DISTRIBUTORS should consist of every fruit growers' union or association in the Northwest, the distributors' organizations, the shipping orchardists, commercial bodies and the several railways. The distributors will be privileged to have their name and location on bottom of front cover, with entire space of inside front cover and outside of back cover for brief matter describing their district or orchard and care with which their fruit is grown, picked, packed and shipped.

ITS PLACE or method of distribution should be in the top of every box of high grade apples shipped, at the distributing booths of our land shows and fairs and leading railway offices of this country; its resting place will be with the family cook-book in the pantry for frequent reference. ITS PRICE has been placed practically at cost, possible only on account of large issue. Sample copies mailed gratis with quantity price to above mentioned class of distributors by publisher, C. C. HUTCHINS, White Salmon, Wash. (Advertisement)

Founded 1839

Capital, \$150,000.00, paid in

Incorporated 1904

JOHN NIX & COMPANY

281 Washington Street, NEW YORK CITY

Pacific Coast Fruits and Vegetables

Our New York Store Centrally Located. One block from Erie R. R. Fruit Depot

Fruit for the Fruit Grower

By Professor C. I. Lewis, Oregon Agricultural College, Corvallis, Oregon

THE average city man thinks of the Oregon fruit grower as one who is so fortunate as to have his table constantly loaded down with fresh fruits. However, a close investigation will show that this is not the case. Our city cousin is much more apt to have an abundance of fresh fruit to eat than is our fruit grower. Likewise, one will generally find that the hotels in the fruit districts are either poorly supplied with fresh fruit or else supplied with fruit of very inferior grade. This

lack of home produce, however, is not entirely confined to fruit growers. I have known of dairymen's families where cream was a decided luxury; and farmers, as a class, often do not enjoy the best the farm affords. A visitor to one of our leading dairy districts was astonished to find that condensed milk was served on the hotel table, and that fresh milk and cream were not to be obtained; and even the butter that was served was of very low grade. It is undoubtedly a mistake for

our fruit growers and farmers not to correct such evils. There is nothing that will make the fruit grower's home more attractive to the children, and, in fact, to all members of the family, than a constant supply of good fresh fruit, and there are few places that I have visited that offer such splendid opportunities for the good home orchard. I would not advocate that each fruit grower set out a large home orchard, for in most cases a single graft in a tree would be sufficient of each variety. In choosing varieties for the home one should plant the favorites, regardless of their commercial value. Apples are likely to be more plentifully grown than other varieties of fruits, but frequently, however, the list is too small. It would be impossible in a short article to make a list of fruits that would be suitable for all parts of the state. Nevertheless many varieties can be grown for the home that cannot be successfully grown commercially.

The earliest good home apple is the Yellow Transparent. This is followed by the Red Astrachan. An early red apple which is most excellent for eating is Williams' Favorite, and this summer I have had some most excellent samples sent in from Idaho and Western Oregon of the old, well known variety "Sops of Wine." The Gravenstein should be in every orchard. Other fall varieties that are favorites are Maiden's Blush, Waxen, Ortley, Jonathan and King of Tompkins County. The Waxen and Ortley are most excellent for cooking and the King of Tompkins County is hard to beat as an eating apple. For early winter Baldwin and Spitzenberg are favorites, while for the month of January the Wagener is hard to beat. The Northern Spy is a favorite in those regions where it grows well. For late apples, Rome Beauty for cooking and the Yellow Newtown and Winesap for eating are among the best. For sweet apples, Sweet Bough for early, Trumbull Sweet and Tolman Sweet for winter. This list would give the family apples twelve months in the year, provided fair storage facilities are afforded. The best early pear for home use is Clapp's Favorite, very juicy and a good canner. The Bartlett, of course, is a stand-by. One of the very best pears to grow for the fall is the Seckel, small in size but superb in quality. They are

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HOOD RIVER APPLES

Present their buyers an avenue for profit which can be appreciated even if it cannot be mathematically measured

Apple Growers' Association
HOOD RIVER, OREGON

PLACE YOUR ORDERS WITH THE
North Pacific Fruit Distributors

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SPOKANE, WASHINGTON

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SPECIFY HOOD RIVER APPLES WHEN ORDERING

What Are You Worth?

There is no limit to the cash value of a
HOLMES-TRAINED MAN

Holmes Business College

Tenth and Washington Streets, PORTLAND, ORE.

27th Year

The Oldest Business College in Portland

MYERS SPRAY PUMPS

OFFER INSURANCE AND PROTECTION FOR YOUR ORCHARDS AND VINEYARDS. They cannot produce the fruit, but they effectively destroy its enemies.



SPRAYING
MYERS
WAY
MEANS
PERFECT
FRUIT
AND
BETTER
PRICES

Our 56-page Spray Pump Catalog describes the complete line—Bucket, Barrel or Power Outfits for every spraying requirement; also Nozzles and Spraying Accessories. Ask for it, and name of our nearest dealer.

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120 ORANGE STREET ASHLAND, OHIO
ASHLAND PUMP AND HAY TOOL WORKS

Ed. Winters says:

"The test of BEAVER BRAND ANIMAL FERTILIZER on my strawberries this spring was very satisfactory. The best results were seen in the strengthening of the fruit stems, which keeps the fruit off the ground, as well as making the fruit larger and brighter. I am fully satisfied that

Beaver Brand Animal Fertilizer

is just what my ground needs and I am going to use it on all my berries this year."

Send for free valuable 24-page booklet containing much carefully compiled information. A postal will bring it, or sign the attached coupon. Tear it out and mail it to us.

Union Meat Co.

Department 45

NORTH PORTLAND, OREGON

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Union Meat Co., Dept. 45, N. Portland, Oregon
Please send me Free Fertilizer Booklet.

Name

Address

City

WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

delightful to eat fresh, and are unequalled spiced. Other pears that should be grown for the home orchard are the Bosc, Anjou and Winter Nelis. For plums and prunes there is a tremendous list. Most people prefer the prunes. Where an early prune is desired the Tragedy fits in nicely. Among the plums that could be grown I would mention the Maynard as a good home plum; Peach Plum, Wickson and Satsuma are all very desirable. The Satsuma has very dark red flesh and juice and is a favorite for canning. There is a very attractive list of cherries to choose from. The Early Duke is one of the best of its season. Royal Ann, Lambert and Bing are desirable, of course. Late Duke is a great favorite, and the Kentish is the most common sour variety grown. There are very few orchards that grow peaches for home use. However, peaches can be grown very easily and successfully on almost every fruit farm in the state. They should be planted close to the buildings, where they are sheltered and escape hard frosts. Then there are the grapes, one of the most healthful fruits that grow, and yet the scarcest fruit produced in the state. Very few orchardists can boast of grapes. I have noted that the students who come to the school are for the most part unfamiliar with our commonest varieties of grapes; and an inspection of our city markets will show that we are not a grape-eating people. You say, they will not succeed. Perhaps you have not tried the right varieties and perhaps you have not nursed them or coaxed them hard enough. Plant your grapes on the south side of the barn or along the south side of a board fence. Plant three or four varieties. Practice annual pruning. You will soon begin to have grapes. The varieties that I would suggest for you to choose from are Worden, Concord, Delaware, Niagara, Moore's Diamond, Brighton and Regal. A few nuts should be grown, and for walnuts the Praepurturien is one of the best, and Franquette and Mayette are standard. For filberts, the Barcelona and Du Chilly are the most successful that we have tried.

In addition to these fruits, the home supply should be supplemented with a good collection of small fruits. For red raspberries the Cuthbert is hard to beat. For blackberries Kittatiny, Snider or Lawton. For black caps, the Gregg. For currants, Perfection and London Market. For gooseberries, the Oregon Champion.

Many will not agree with the list that I have suggested and will prefer certain favorites, and with such people I will have no quarrel. My principal aim is to get our fruit growers to make a planting that will mean fresh fruit every day in the year for their home table.

The North Pacific Fruit Distributors withdrew all apple quotations on September 18. However, new quotations will be out before this edition is off the press.

"Diamond Quality"

FRUIT TREES

Grown in Oregon

Have heavy fibrous roots, are

Sturdy, Well Grown, Healthy Trees

and are dug and packed as ordered

SPECIALS

Apple Trees

This is the year to plant apples. Better grades at lower prices than ever before. Write us.

Pear Trees

Extra fine grades of best commercial sorts at right prices

Prune Trees

The prune district is limited; the demand increasing.

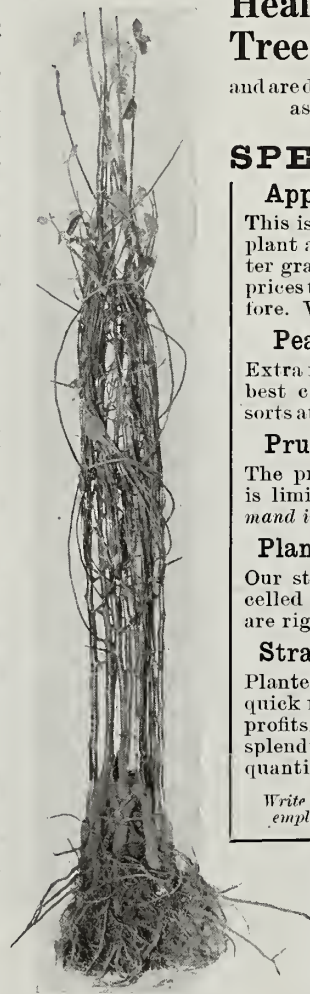
Plant Prunes

Our stock is unequalled and prices are right.

Strawberries

Planted now bring quick returns. Big profits. We offer splendid stock; any quantity.

Write us direct. We employ no agents.



These apple trees with well branched tops and large fibrous roots are 7 feet high and only One Year Old.

Our 64-Page Autumn Catalog

of Fruit, Shade and Ornamental Trees, Berry Plants, Roses, Bulbs, and Flowering Plants, listing profitable varieties for commercial or home planting, is

A Safe Guide to Your Purchases

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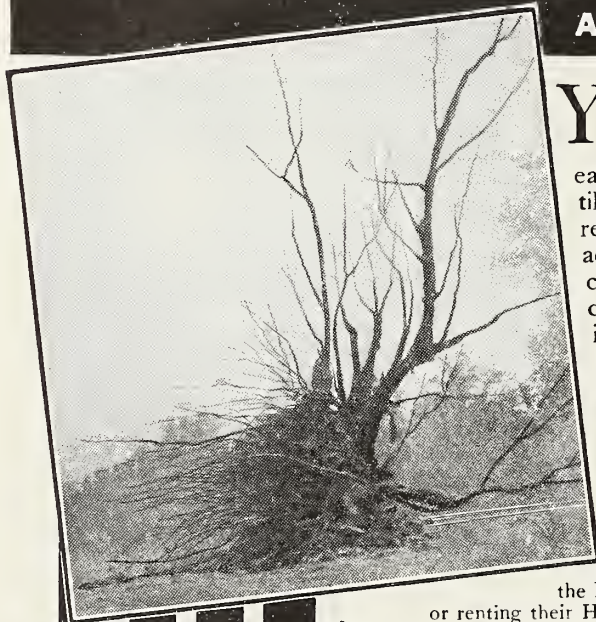
PORTLAND SEED CO.

PORTLAND, OREGON

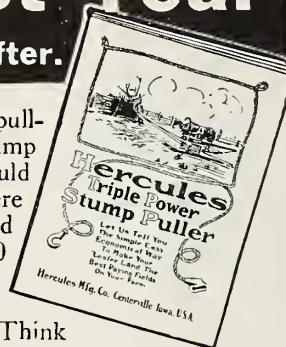
WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

Your 40 Acres of Stump Land Can Be Turned Into a Profit of \$1281.00 The Very First Year

And \$750 Every Year After.

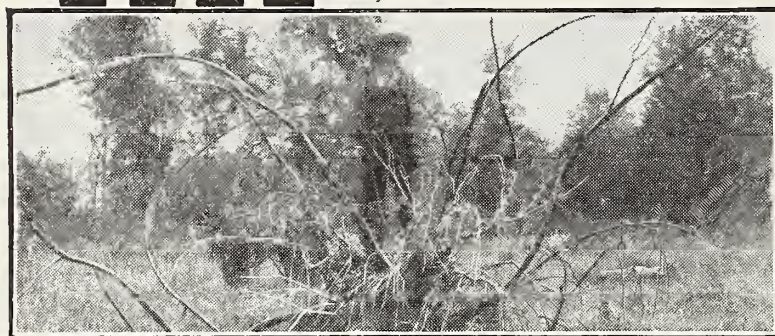


YOU can double the land value by pulling out the stumps. If your stump land is worth \$20 an acre—it would easily be worth \$40 an acre if it were tillable. On 40 acres the increased realty value would be \$800. On 40 acres of cleared land—*virgin soil*, you could easily raise 1500 bushels of corn—at 50c per bushel—\$750. Think it over Mr. Farmer. Stumps cost you big money. With land values going up—and crop prices as high as they are—you *can't afford* to keep on paying taxes for land that doesn't bring in a cent.



This Free Book Proves It

Read how thousands of other progressive men have pulled out stumps on their land instead of buying new lands. They've taken advantage of the virgin soil that the stumps keep away from cultivation. They've paid for their stump puller over and over again the first year with the profits from the extra crops and increased value of the land. And now they're doing contract stump pulling for their neighbors or renting their Hercules Stump Puller at a nice profit. But the main thing is, their own land is free from costly stumps—they farm all their land—and all their acres are at top-notch realty value.



machined and finished to reduce friction—hence the lightest draft machine. I want you to remember that the Hercules is 60 per cent lighter and 400 per cent stronger than cast iron or the so called semi-steel or new process steel which are catchy phrases now-a-days used to describe cast iron pullers; that you can clear almost three acres without moving the Hercules that the double safety ratchets absolutely prevent accident to the men or team.

HERCULES All Steel, Triple Power Stump Puller

It will pull up any size stump, green tree or hedge in five minutes. It will clear an acre or more of stumps a day.

I want you to bear in mind that the Hercules is the only Triple Power, All Steel Stump Puller made; that it can be changed from triple to double or single power in a moment's time without trouble; that it is the only stump-puller having all the working parts

Guaranteed for Three Years

The all-steel construction, the triple power feature that saves your team and gives a tremendous increase of power, the double safety ratchets and careful turning and machining of every part—all these things make it safe for us to guarantee the replacement of any casting of a Hercules that breaks at any time within three years, whether it is the fault of the machine or your fault. Could any guarantee be fairer or stronger?

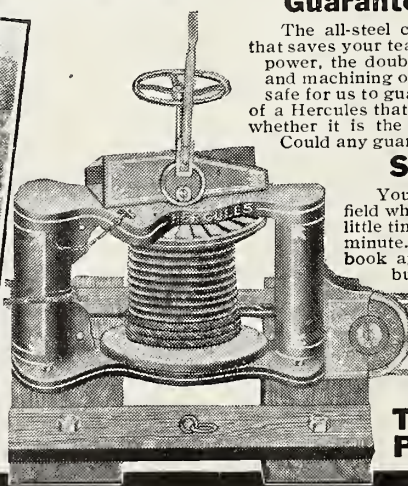
Send In Your Name

You cannot afford to have stumps in your field when it is so easy, so cheap and takes so little time to pull them out. Don't wait another minute. Mail me a postal at once for my fine book and my low introductory offer to first buyers. Address me personally.

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Hercules Mfg. Co.

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Centerville,
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TRADE MARKCODES
A. B. C. — ECONOMY**C. W. WILMEROTH, PACIFIC COAST REPRESENTATIVE**
SEATTLE, WASHINGTON, P. O. BOX 1898**202 & 204 FRANKLIN STREET, NEW YORK**

Standardization of the Prune

Address of Professor C. I. Lewis before the Prune Growers of the Northwest, at Salem, Oregon, July 3, 1913

PRUNE growers as a rule are very familiar with the history of the Italian prune. We know the disastrous failures in the early days, due to the fact that prunes were planted on all sorts of ground and under all sorts of conditions, and that practically nobody understood the evaporating process. Considerable costly experience was necessary to put the prune on its feet, and from 1903 to 1911 the prune business of the Northwest on the whole has been very satisfactory. The season of 1911, however, was a rather bad one for the prune business. Not only for that season alone, but because it influenced prices received last year and may influence the demand and prices to be received for some years to come. Many of the prunes did not keep well. The buyers felt that they were stung and as a result they became dissatisfied. Buyers who formerly bought many tons of the fruit refused to take any. While the season of 1911 climatically had much to do with the result, nevertheless a great deal of the trouble with the prunes was due to the fact that there is practically no standard at present other than that which depends on size alone. The shiftless grower, the man who runs cracked prunes, green prunes and rotten prunes into his pack, makes just as much money, in fact often makes more money, than the careful, conscientious grower. This will continue to be so until we can get some standard other than size. The prune business of the Pacific Northwest will never come into its own—will never develop as it should develop—until this condition is changed.

During the summer of 1911 the Horticultural Division of the Oregon Agricultural College made a prune survey, in which we visited some seven hundred orchards scattered in nine different counties in Oregon. While the survey was disappointing in many respects it was nevertheless very valuable in that it showed us that there is a great work to be done among the prune growers. Every prune grower of the state should have a copy of this survey, which is contained in the Biennial

Crop, Pest and Horticultural Report, which can be received free by sending a postal card to the State Experiment Station. The survey, in a word, showed that there is practically no common practice among the growers of either growing or evaporating the prune. It is not uncommon to find that certain valleys grow prunes alike all through the

valley, regardless of the differences of the soil, or to find that in another valley just over the hill the crop is handled in an entirely different manner. In evaporating we find that every man has his own system and is very apt to say his is the best in the entire state. I suppose there are a dozen men who are present today who will say

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A. MILLER & SONS, Inc.—MILTON, OREGON

Special Attention to Commercial Orchard Stock in Pear, Cherry, Apple, Prune

You can buy cheaper trees for less money
but you can't buy better trees for more moneyA Catalog and Special Prices
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Help Fight the Great Red Plague

Citizens of the state are urged to inform themselves regarding this plague which is causing great suffering among boys and young men, and especially among the innocent girls and women of the state. Parents are urged to protect their children, and provide clean, wholesome information in place of the unclean misinformation they cannot now help getting. Send for any of the following

FREE CIRCULARS

For Young Men—Circular No. 2—The Four Sex Lies
Circular No. 9—Sex Truths for Men
For Older Boys (13 to 18 years of age)—Circular No. 8—Virility and Physical Development
For Younger Boys (10 to 13 years of age)—Circular No. 7—The Secret of Strength
For Girls—Circular No. 4—A Plain Talk with Girls About Their Health
For Young Women—Circular No. 10—Physical Development, Marriage and Motherhood
For Parents—Circular No. 1—The Need for Education in Sexual Hygiene
Circular No. 3—When and How to Tell the Children
Circular No. 5—A List of Books for Use in the Family on Sex
Send 2-cent stamp with your address to Department D

The Oregon State Board of Health, 720 Selling Bldg., Portland, Oregon

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Over 100 Styles and Sizes to Choose From

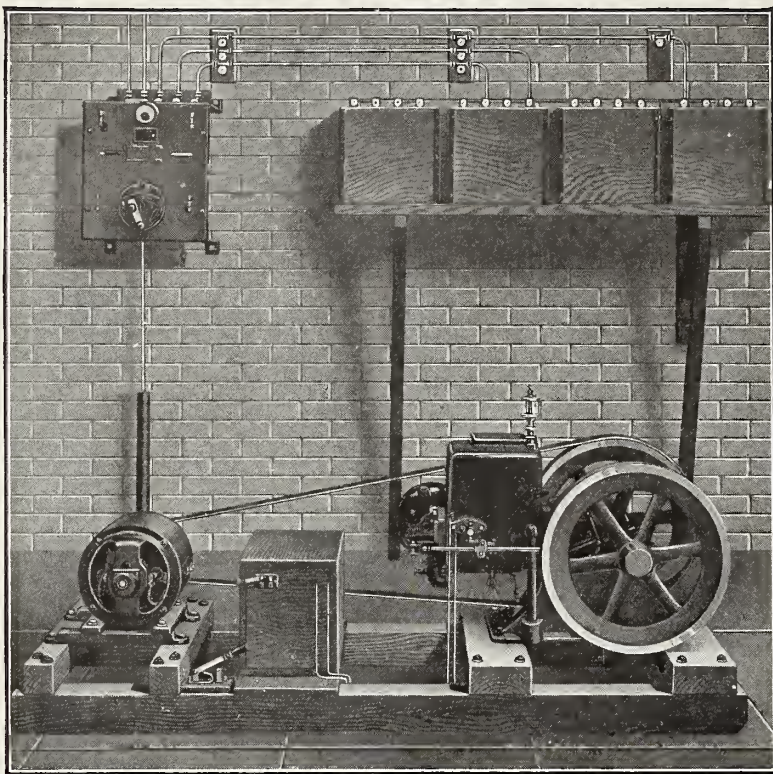
We have the tool to meet the needs of every farmer, whether he uses one small horse or a big tractor engine. For over a quarter century we have been making CUTAWAY (CLARK) tools so good that today they are the standard of real worth. Our little book, "As Told By Others," tells what users of CUTAWAY (CLARK) machines think of them. Write for it today. Ask the CUTAWAY dealer in your town to show you a CUTAWAY (CLARK) harrow. If we have no dealer there, write direct to us for catalog. Don't accept a substitute.

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Maker of the original CLARK Double Action Harrows

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"The Soil and
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You cannot make any other investment that will yield more real comfort and pleasure than an economical and reliable electric light system. The Elyria-Dean "Homelite" will light your home with the brilliancy of a city mansion at less cost than public service companies. No knowledge of electricity is necessary—cranking is done away with by the self-starting feature.

Write today for complete information to
The John Deere Plow Co., Portland, Oregon, or
The Dean Electric Co., Sole Manufacturers
 1054 Taylor Street, ELYRIA, OHIO

*Look for Elyria-Dean
 when quality's seen*

that they received the highest price received for dried prunes in the State of Oregon. There is very little knowledge in common, so to speak. This lack of uniformity in methods of growing, in methods of evaporating, in the type of product that is turned out, is a serious condition. The prune business would seem to have a bright future if properly handled. The Italian prune is a favorite fruit among those people who desire a tart or sour fruit, and there are certain peoples, especially those of Northern Europe, who have settled in Eastern cities, who prefer this prune to the sweet French prune. There will always be a good market for a tart prune properly grown; likewise there will always be a good market for a sweet prune properly handled, but it will go to an entirely different class of trade.

A question which we have to solve is, "What prune shall we grow?" Have we at the present time the ideal prune for our conditions? We have the advantage in that we grow a large, tart prune. We have the disadvantage in that some seasons rain interferes with the harvesting of this crop and often the fruit does not mature and is too tart. The survey showed us that there is a great variation in the Italian prune. Undoubtedly there are also many prunes called Italians which are not. We need to get a better prune if it is possible to secure it, and the Division of Horticulture is now working on the problem. We have started some prune-breeding investigations to see if we cannot get a prune which measures up to the market requirements somewhat better than the present Italian prune. Every prune grower in the State of Oregon can help us in obtaining a better prune by reporting to the Division of Horticulture whenever they find that they have a tree in their orchard which has fruit that is superior to the other trees as regards size of fruit, quality of the fruit, and especially in the early maturity of the fruit. By proper selection, and possibly by certain crossing, we may be able to get a prune which will be more satisfactory than the present Italian prune.

The maturity of our prune is a serious question. We find that some years the prune does not ripen as well as others; it does not develop as much sugar; does not drop off the trees. What causes this variation? Is it merely a matter of climate? Why is it that often the ripest and best prunes on the trees will not drop? Then there is undoubtedly a temptation to shake the trees too vigorously and to remove fruit from the tree which should not be gathered. At the same time unless some precautions are taken much of the fruit will be ruined, since it would never drop.

Can we establish a field standard for prunes? We find that in California they have established a field standard for grapes. Unless they come up to 17 or 18 per cent sugar they will not be taken by the association. Can we

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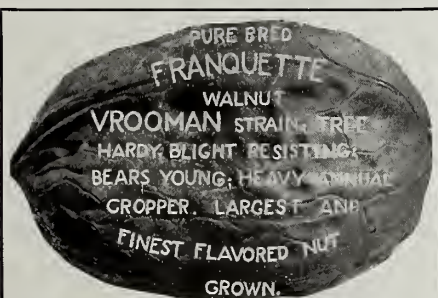
Storage for 50 Cars

NEW ORLEANS'
 FANCY FRUIT HOUSE
 The House of Quality

GOOD THINGS TO EAT
 EVERYTHING
 FROM EVERYWHERE

establish a chemical standard of solids or acids or sugar content? Or will it be a specific gravity standard? Or will it be one decided by noting certain physical characteristics of the fruit? We need to make a complete investigation of the evaporation of the prune. The lack of common knowledge concerning the various operations connected with the evaporation process shows that this subject should be given some careful investigation. Is it possible to grade this fruit before it goes into the evaporators, and if it is to be so graded what basis shall we grade it on? In the washing and the drying and use of lye we should come to some common understanding. Then there is the matter of the amount of heat and the time that certain grades of prunes should be heated for the greatest economy in evaporation. In the competition for the world's prune trade the Pacific Coast has got to look after the pennies; it has got to save money on every turn and at the same time eliminate the inferior grades. We cannot pay freight across the United States and into Europe on inferior grades of fruit.

It will be interesting to note just what changes the prune passes through



WALNUTS AS A FOOD

A leading London medical journal recently published an article concerning WALNUTS as a FOOD, in which it claimed that

"30 large walnut kernels contain as much food value as 2½ pounds of lean beef."

With beef worth approximately 20 cents a pound, to the consumer it means that each walnut is worth about 2 cents as a food product as compared with beef.

You undoubtedly have space for at least a few VROOMAN FRANQUETTE trees on your place, if you cannot plant more, and nothing else will give you greater returns for so little effort or trouble. Even as a shade tree it is exceedingly desirable. Our trees are first-class and prices are right. Insist always on the VROOMAN FRANQUETTE if you want greatest results.

We have spent a lot of time and money in securing dependable trees; we now have them.

If interested address

Oregon Nursery Co.
ORENCO, OREGON

Reliable salesmen wanted.



Ranching by Electricity a Real Economy

Here is a 5-horsepower G-E motor mounted on a sled. The equipment is in daily use on the ranch of E. A. Smith, Napa, Cal.

In the photograph the outfit is shown sawing wood, but sawing wood is only one of its many duties. The sled is moved around from place to place, wherever power is required, to grind feed, cut ensilage or to pump water—saving its owner money, because of the great amount of work performed at small power cost.

All over the West and Northwest, ranchmen, stockmen and farmers are enthusiastic over

G-E Electric Motors For Ranch Use

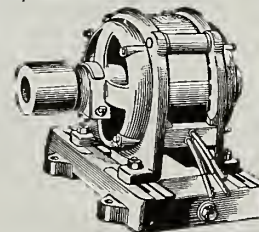
Convenience, economy and ability to get through hard jobs quickly and well have made G-E motors the favorites.

Electric service on your ranch will give you all this convenience and economy and—in addition—your women folks can wash and iron, cook and clean by electricity and, in summer, you can operate a small refrigerating plant or run electric fans throughout your house.

G-E electric motors are the simplest of mechanisms—strongly made—no small parts to get out of order. Repairs and replacements need not worry you. Reliability of operation is assured the owner of a G-E motor. It is made to deliver power every hour in the day, and every day in the year if necessary—it can be switched off and on a mile away.

If you are not using it now you'll soon decide to use electric power on your ranch—but before you decide, send for our free illustrated booklets about Ranching by Electricity.

The General Electric Company will, on request, gladly answer all questions relating to the use of electric power for ranch and market garden irrigation. Write to the nearest office of this company.



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from the green state to the cured condition. Does the subjecting of this fruit to the heat bring about certain chemical changes? Does it bring about maturity? Are there any interchanges of the sugars? This means that we will have to make a chemical investigation of the prune. After the prune has been evaporated can we then establish a grade other than that which is merely established according to the size? If so, what shall it be? Then there is the matter of processing. Are the present methods of processing the best, or is it going to be possible to improve upon these methods? As soon as the fruit has been processed, what is the relation of former standards to those standards that we may establish? How shall this fruit be shipped? Are we going to be able to handle it in such a way that we

will always ship it in boxes, or are we going to be forced to put it in tin cans? We can easily see, then, that we are anxious to find out what grower's methods are the best, whose methods of evaporating and processing and packing are the best, so that we can use these as standards.

Have we any competition in this standardization? We certainly have. The competition for the Northwest prune comes from two sources, the French prunes of California and the prunes of Europe. While we have overcome to a certain degree much of the competition of French and German growers, we receive very stiff competition from certain parts of Southern Europe. In Bosnia, a part of Austria, and in Serbia it is estimated that the crop this coming year will be very

perts. They should call upon the packers and the buyers, as these men come very closely in touch with the market problem and it is to their interest to help the growers in every way. It is to the interest of the packers and buyers that the prune business keep in a healthy condition; that the standards be set high, that the demand be good. Then I would suggest that all of these different fruitgrowers' associations have a meeting at least once a year in some central point where they will all come together and discuss the problem together and thresh it out, exchange ideas and get the benefit of each others' experience. Not only should we work from the point of view of the grower, but also from the viewpoint of the evaporator. Then an investigation should be started of the evaporation to see if we cannot get a better knowledge for a basis as to what standards can be established. Then likewise a careful study of the processing or packing should be made to see what the final grades should be—to see what the final package should be. Are some of our processing practices faulty and do they mean a loss of fruit? What relation does processing bear to the prevalence of mold or to poor keeping qualities?

Standardization in all probability will have to be followed up by an inspection. Possibly we shall have to inaugurate a certain kind of inspection to see that the sanitation in connection with the business is what it should be, because if it is not sanitary then the general public will find it out and taboo the product. Second is the inspection to maintain the grades and standards. We find, for example, that in selling strawberries, apples and pears it is necessary to have this inspection if we get the best results, and after all the grower is not the man to kick upon proper inspection. The role of the Oregon Agricultural College in this investigation will be an important one. We are at your service; we are here to help you. The divisions of horticulture, chemistry and plant pathology are going to co-operate and try to solve this problem. We now plan to conduct a serious investigation into the present methods of evaporation. We shall trace the fruit from the time it leaves the tree till it is ready to sell. This will mean a certain chemical study of the solids and acids, a study of the technique of evaporating, including the washing, grading, evaporation in relation to heat and ventilation, etc. The pathological study will take up the study of certain molds and fungous growths and the technique of evaporation. Then there is the subject of mites and worms, which will be handled by the entomology department. It may be that we will not be able to solve this problem in one year, but we hope to get such information that will lead us to establish certain standards in drying this product. But if the prune is to come into its own, if this business is to develop to its greatest extent, it is going to be necessary that the growers get together and co-operate in this attempt to standardize the prune.

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99% PURE

Choice, re-cleaned seed—we can furnish the seed tested for purity and germination.

THE CHAS. H. LILLY CO.
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FIG. 639

"When the juice is in the apple"

Mount Gilead Cider Presses

Why not convert your "off-grades," "wind falls," etc., from waste to worth? There's a "juicy" profit in those apples for you. A Mount Gilead Cider Press Outfit will get it all out and put it in your pocket. Our Cider Evaporators, Apple Butter Cookers, Vinegar Generators, Pasteurizers, etc., are mighty profit makers too.

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The Hydraulic Press Mfg. Co.

60 Lincoln Avenue, Mount Gilead, Ohio



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we are producers as well as manufacturers**

Silo of Clear Fir 40% to 60% saving

We furnish complete, a silo of finest fir at an amazing saving. Staves are clear one-piece fir. No sap or knots. Last for years and years. Seattle Silos have

Improved Swinging Doors

Never stick or bind. Never have to be lifted. Swing in or out readily. Door bars form ladder from which hoops can be tightened.

When silos are ordered without additional lumber to make a full car, we can usually arrange to get you car load rates. Write for special offer to one farmer in each township.

Since we began our revolutionizing policy of selling users direct, many others would like it to appear that they are giving buyers the same opportunity.

Here is the difference: We are not wholesalers, nor jobbers, nor merely mill owners. Every piece of lumber and millwork produced in our mills comes from forests owned by us.

Save 40% to 60% Get lumber of better quality

We own billions of feet of standing timber in California, Oregon, Washington and British Columbia. Do our own cutting, logging, railroading. Operate six great mills. Our output is 20 to 30 carloads per day.

Quick delivery—Satisfaction guaranteed

We fill all orders within 24 to 48 hours. Seven railroads rush shipments to you. Delivery is made within an average of two weeks. Satisfaction guaranteed or money refunded.

Write today for catalog and delivered prices. Better still, send list of materials for estimate. Mail the coupon today.

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Kindly send the following, quoting prices delivered my station:
() Catalog of lumber and millwork () Special silo folder.
(Be sure to write plainly)

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Business

I am planning to build as follows:.....



Nine Kimball Cultivators in operation on property of Dufur Orchard Company, Dufur, Oregon, owned by the Churchill-Matthews Company, 510 Spalding Building, Portland, Oregon. This company is using at this time thirty-five Kimball Cultivators on their Dufur, Sheridan, Drain and Cottage Grove properties. This speaks volumes for home-produced machinery.

The Kimball Cultivator

GREAT WEEDS AND FERN EXTERMINATOR

How to Use the Kimball Cultivator to Keep Your Orchard in Perfect Condition

The first thing in the spring, as soon as the ground is dry enough, it should be well plowed or disced both ways, or diagonal if the trees are planted in that manner.

The rest of the season nothing is needed but the **KIMBALL**, which should be run over the ground

at least twice each month during the summer, or as soon as the ground is dry enough after a hard rain, or after irrigation.

This will break up the crust and stop evaporation, for when the soil bakes and opens in cracks is the time of the greatest evaporation.

More cultivation and less irrigation will produce better fruit, and it will keep longer than where too much water is used.



RETAIL PRICE SCHEDULE

No. 4—4½ feet, 6 blades, weight complete, 70 lbs.....\$13.50
 No. 5—5½ feet, 7 blades, weight complete, 85 lbs..... 15.00
 No. 6—6 feet, 8 blades, weight complete, 100 lbs..... 17.50
 No. 7—7 feet, 9 blades, weight complete, 100 lbs..... 18.50
 No. 8—8½ feet, 11 blades, weight complete, 115 lbs.... 20.00
 No. 9—10 feet, 13 blades, weight complete, 140 lbs..... 25.00

No. 10—12 feet, 10 blades, open center, weight complete, 140 lbs.....\$22.50
 No. 11—12 feet, 15 blades, weight complete, 185 lbs.... 30.00
 No. 13—One 8½ and one 9 feet, 23 blades, gang, fully rigged, weight 250 lbs..... 47.50
 Extra blades, \$1.50 each; weight 5 lbs. each.
 Extra frames, \$1.00 per foot; weight 10 lbs. per foot.

TERMS: Cash with order, except to dealers with established credit. All quotations f.o.b. The Dalles, Oregon

W. A. JOHNSTON, Manufacturer

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Office and Factory, 422 East Third Street, The Dalles, Oregon

CHARLES WHITE & HALL, Ltd.

Fruit Exchange

Victoria Street, LIVERPOOL

SPECIALTIES: FANCY APPLES AND PEARS

Suggestions and Tables for Fruit Growers

Compiled by Charles L. Hamilton, North Yakima, Washington, June 25, 1913

PRUNING

1—*Winter Pruning:* (a) Winter pruning has a direct bearing on the size and color of the matured fruit. (b) Size depends a great deal on the ability of the tree's root system to supply plenty of nourishment to the bearing surface; if too much top or too much wood in general is left on tree the fruit will be small unless very thinly distributed over bearing surface. (c) Color depends on the amount of sunlight and air that can penetrate through the foliage to the fruit.

2—*Summer Pruning:* (a) Summer pruning has tendency to force trees to set fruit buds for following season. (b) Summer cutting out of watersprouts helps by (1) holding in check the blight; (2) allowing more air and sunlight to reach the fruit; (3) makes it easier to fight the aphids. (c) Summer cutting back of new growth and thinning out of larger limbs; (1) makes less surface for action of wind; (2) helps protect fruit from limb rubs and scratches; (3) makes spraying easier; (4) helps in the fight against the aphids; (5) allows more air and sunlight to reach the fruit; (6) tends to keep the tree from throwing out watersprouts.

CULTIVATION

Cultivation helps to hold the moisture in the soil, allowing an even, uninterrupted flow of sap to the bearing surface and thus insuring a steady growth to the fruit, which makes better quality.

COVER CROPS

1—Cover crops check the rapid wood growth of the tree, thus allowing more air and sunlight to reach the fruit. 2—They have a tendency to make tree bear earlier and heavier.

IRRIGATION

1—Regular watering keeps the tree healthy and the fruit growing steadily so that it will mature normally at the proper time. 2—Lack of water during too long period will cause fruit to be small, dry and of a poor flavor, and often cause it to mature ahead of its season. 3—Over water supply or late watering: (a) Often causes water core in apples; (b) injures keeping quality of fruit. 4—Cultivated orchards should have water only three, or at most four, times during the season on heavy deep soil, but oftener on lighter or thinner soils. 5—In case of cover crops, clover requires more frequent waterings than alfalfa on account of shallowness of root system and heavy evaporation of leaves; the root system of alfalfa grows very deep in the ground and requires less frequent watering.

THINNING

1—Proper thinning helps tree to produce marketable fruit each season; tends to avoid danger of alternating crops. 2—Secures best selling and most profitable crops.

3—*Disadvantage of small sizes:* (a) Brings lower price on market. (b) Hard to sell even at prices much lower than those asked for larger sizes; small fruit usually means poor quality. (c) Every box of small fruit takes the place of a box of larger fruit and at less than half the profit. (d) Takes greater weight of fruit to fill box. (e) Takes nourishment from soil without bringing profits that can be used in rebuilding. (f) Exhausts the vitality of the tree without adequate return; by far the largest percentage of the tree food is used by the fruit in the formation of the core and seeds, which are practically the same in all sizes of fruit; flesh of the fruit consists principally of water; small fruit thickly set is heavier than larger fruit properly thinned. (g) Cost more to pick, sort and pack than larger sizes.

4—*Advantages of large sizes:* (a) Brings highest prices in markets. (b) Is easy to sell because demand is greatest. (c) Sustains reputation for large sized fruit, which is one of the chief assets of the Northwest. (d) Takes less weight to fill box. (e) Is cheaper to pick, sort and pack. (f) Cost of packing and package being the same or less, every additional cent over selling price of small sizes means so much additional profit.

5—*General points:* (a) By proper attention thinners can remove all inferior or blemished specimens of fruit, and thus the energies of the tree are sent into developing marketable fruit. (b) Never leave two specimens of fruit on the same fruit spur, cherries excepted. (c) Fruit should be thinned, if possible, so that the specimens next to each other will not be directly in line on the limb, but alternating from side to side.

6—*Special Suggestions:* (a) Peaches—Peaches should be thinned from 6 to 12 inches, depending on condition and age of tree and amount of fruit set; the smaller the variety naturally runs, the greater the distance they should be left apart. Peaches smaller than 96 pack in early varieties and 84 in Elbertas are not wanted by the trade. (b) Prunes and Plums. (1) Size plays a very important part in the selling of prunes and plums. (2) The smaller growing varieties, such as Italians, if very heavily loaded, should be thinned so that the matured fruit will be large enough to pack 6x6 or larger. (3) Hungarians, Bradshaws, Peach Plums, etc., should be thinned out to 5 inches. (c) Apricots and Yakimines. (1) The larger growing varieties, such as Royal, Moorpark, Yakimines, etc., should be thinned out from 3 to 5 inches, depending on the age of the tree and the setting of the fruit. (2) The older the tree

the farther apart the fruit should be left. (d) Pears. (1) The larger growing varieties, such as Bartletts, Buerre d'Anjou, Comice, Flemish Beauty, etc., should be thinned from 4 to 10 inches. (2) Smaller growing varieties, such as Winter Nelis, Fall Butter, Seckel should be thinned out from 4 to 8 inches, depending on the age of the tree. (3) The older the tree and the heavier the setting of fruit the farther apart the fruit should be left. (e) Apples. (1) Apples that have a tendency to run small, such as Winesaps, Grimes, Jonathans, Missouri Pippins, etc., should be thinned from 4 to 10 inches. (2) Apples that run large, such as King of Tompkins, Staymans, Rome Beauties, etc., should be thinned from 6 to 12 inches. The larger growing varieties will stand heavier thinning than the smaller growing varieties, without danger of overgrowing and spoiling the keeping qualities of the apple. (3) The older the tree and the greater the setting of the fruit, the more urgent the need of thinning and the farther the apples should be left apart. (4) In thinning, aim to leave every other apple on the opposite side of the limb.

PICKING

1—Care should be used by pickers not to break off the fruit buds for the following year. 2—Never allow the orchard boxes filled with fruit to stand in the sun.

3—Where possible, pick fruit during the coolest part of the day.

4—Picking at proper time is just as important as any other part of the work. (a) Fruit picked too early is usually unfit for food. (b) Fruit picked too late is usually too ripe for shipment, as in the case of overripe peaches, apricots, prunes, plums, etc. (c) Apples picked after heavy frost do not hold up well.

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(d) Rain on fruit that is maturing injures the keeping quality. (1) In the case of yellow peaches, causes them to ripen without showing proper amount of yellow color, and often causes them to turn black at pit. (2) Cherries, plums, prunes and apricots will ripen and start to decay soon after packing where rain comes at time fruit is almost ready to move. (3) Pears are affected in the same way as cherries, plums, prunes, etc., but will hold up longer. (4) Apples that receive heavy rains when maturing will not hold up as long as they would under proper climatic conditions.

5—Care should be exercised in picking the different kinds of fruit so the marketable qualities will not be injured. (a) Cherries. (1) Cherries should be carefully picked from tree, so as to secure part or all of stem. (2) When picking cherries, all blemished, misshapen, stemless or green fruit should be thrown out by pickers. (3) Pick into small buckets and pour gently into orchard boxes. (4) Boxes should not be filled over 6 inches deep and should never be allowed to stand in the sun. (b) Prunes and Plums. (1) Care should be taken by pickers to pick fruit with

stems intact. (2) Pickers should be very careful in picking not to brush off the bloom. (3) Gloves should not be used in the handling of prunes and plums. (4) Prunes and plums should be hard ripe for picking; fruit should contain some sugar and be matured enough so it will continue ripening and have a good flavor. (5) Wherever possible, pack directly out of picking buckets. (Saves handling, protects the bloom.) (c) Peaches. (1) Peaches should be hard ripe for picking. (a) White peaches should be in such a condition that they will have lost that deep green cast and show light green or silvery white and be filled out. (b) Yellow peaches, when in condition to pick, should have lost the deep green cast and should show a golden yellow on the sunny side. They should be well filled out. (2) Peaches should be laid in basket or bucket, never allowed to drop. (3) Pickers should throw away all blemished or misshapen fruit. (4) Baskets or buckets filled with fruit should be hauled from orchard to packing house in a wagon that has a good set of springs. (5) Peach trees should be picked over from three to five times during the season. (d) Apricots and Yakimines. (1) Should be hard ripe for picking. (a) Should show yellow over most of specimen. (b) Should be matured enough so that it will continue ripening and have a good flavor. (c) Wherever possible, pack directly from picking basket or bucket. (d) Where necessary to haul loose fruit in orchard boxes, care should be taken in pouring from pail into boxes. (1) Place bucket in box, place hand on fruit, tip bucket and allow fruit to roll out gently. (2) Boxes should not be filled over six inches deep. (e) Pears. (1) Care should be taken not to pick fruit before it is in condition to ripen. (2) Should be green for shipment. (3) Large growing varieties, such as Bartletts, Flemish Beauties, Clapps Favorite, etc., should be 2½ inches in diameter or larger. (a) The first picking of Bartletts, Flemish Beauties, Clapps Favorite, etc., from young trees, should be 2½ inches in diameter, and from older trees that are heavily loaded 2½ inches. (4) Pickers should be very careful in picking to secure the stem of pear intact; by lifting up and out, with a light side twist on pear, it will come off spur easily without breaking stem. (5) Pears should never be poured from bucket into orchard box, but transferred by hand. (f) Apples. (1) Apples should be carefully picked and handled. (a) Care should be used by picker to secure stem of apple intact. (b) By lifting up and out, with a light side twist, apple will come off spur easily and without pulling out stem. (c) Lay apple in picking basket; do not drop. Every apple dropped bruised two or more. Bruised apples are unmarketable. (2) Large apples should be transferred from picking bucket to orchard box by hand. (3) Small apples may be carefully poured from bucket into box. Place bucket in box, tip slowly, holding hand over top of bucket, allowing apples to roll out gently. (4) Apples should not be picked when frosty. (5) Windfalls, if picked up, should never be mixed with the good fruit. (a) If a grower wishes to have windfalls handled, he should first store them away for two or three weeks so that bruises will have a chance to show up. (b) It is impossible to sort windfalls right if direct from orchard.

SORTING

1—General Instructions: Sorters should study the rules carefully until thoroughly familiar with them, for on them, next to the packers, rests the responsibility for proper grades, and careful work on their part will make it possible for the packer to put up a good box of fruit. Packers should be equally familiar with grading rules and should not place absolute dependence upon the work of the sorter. They should look for and lay out the off grade fruit which will sometimes be passed by the very best sorter. On the packer, who is the last to

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see the fruit before it is wrapped and packed in box, lies the ultimate responsibility for the proper grade and pack.

2—*Apples*: (a) Apples should be sorted from orchard boxes into four boxes where the three grades, Extra Fancy, Fancy and C grade, are made; only three boxes will be necessary where C grade is not packed. Place the box for the Extra Fancy on the right-hand side of the orchard box, box for Fancy on left of orchard box, and where C grade is packed place a box for them on the left of the box for Fancy; place a cull box on the floor. (b) Care should be taken by the sorter to mark the grade on each box in such a way that marks will not show when boxes are used for packing and are nailed up. (c) in sorting, apples should be laid in the box, not dropped. (d) If one end of the box is filled full of fruit and apples allowed to roll from that end to the other, punctured apples and bruises will be the result. (e) Where apples are packed into the single grade to be known as Fancy, only two boxes are necessary, one on the right of the orchard box for the Fancy and one on the floor for the culls. If C grade is to be packed, another box to contain them should be placed on left of orchard box.

3—*Pears*: The apple suggestions apply also to pears.

4—*Peaches, Apricots, Prunes, Plums, Cherries, etc.*: Sorting out of inferior fruit should be done by pickers in the orchard when picking and by the packers when packing.

PACKING

1—Proper packing is just as important as proper sorting, for a good, neat pack helps sell the fruit. Observe these two rules carefully: (a) Wrap fruit neatly. (b) Do not mix sizes; failure will mean an unattractive package, which will injure the sale of the fruit. There should be little variation in the sizes in the packed box, because the use of different sized specimens makes it impossible to keep all the spaces the same size, consequently the packer loses the alignment and is in danger of changing the pack.

2—*Cherries—10-lb. boxes*: (a) In making box, top should be nailed on, bottom left off. (b) Box should be placed before packer with open bottom up. (c) Carefully pack the bottom tier, which will be the top when pack is completed. (d) In packing the first tier care should be taken by the packer to place the flattest side of the cherry next to the board. (e) Two boxes should be used. While filling in the first box that has been faced, pick out proper sized fruit to face the second box. (f) Use only the square pack, never a broken one. (g) Both ends of box must be packed alike. (h) Keep all stems on first two tiers up, and all stems down on the bottom, which will be the top of the box to the packer. (i) See that the corners are well filled. (j) After box is nailed up there should be no stems showing. Edges of box where cherries are exposed should present a packed appearance. (k) Nailers should be very careful when lidding up not to cut or mash any of the fruit; all such cherries should be removed and replaced with good fruit.

3—*Cherries—20-lb. or 25-lb. boxes*: Follow same instructions when packing either 20-lb. or 25-lb. boxes as those given for 10-lb. boxes, except that two tiers should be packed instead of one.

4—*Cherries—Strawberry crates*: Where strawberry crates or four-hallock carriers are used for packing cherries, hallock should be well filled, shaken down and topped or faced so they will be rounding full. There should be no stems showing. Use square pack.

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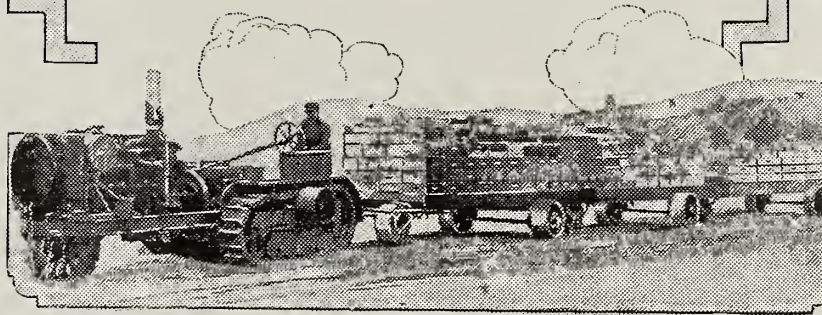
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5—*Apricots, Yakinines, and all the larger varieties of Prunes and Plams, and all such fruit*: (a) Should be packed in four-basket prune crates, unless special order is given to put them up otherwise. (b) Pick as large a percentage as possible with stems on; throw out all stemless fruit where skin is broken or torn. (c) Fruit too small to pack 6x6 should never be packed in prune crates and should only be shipped in 1-inch peach baskets where special order is given. (d) Wherever possible use square pack. (e) Size of crate 14x16x17³/₈, except for extreme sizes, then increase or diminish depth only. (f) Care should be used by the packer in placing the paper in the basket. Crate should be placed on packing table with slatted side toward packer; after four baskets are fitted into the crate, they should have the paper fitted into them in such a way as to cover half the bottom of each basket, allowing the remaining paper to lap over the slatted sides of the crate; after first tier is packed in basket fold paper over it and pack second tier, which in turn should be covered by the paper, and the third or last tier packed, after which the remaining paper should be folded over the top. (g) Pack all Italians and

Tragedies three tiers, stem end down; pack top tier with creased sides lined up. (h) Varieties that will go 4x4 in a square pack or larger may be packed two tiers; Hungarians, Bradshaws, Peach Plums and similar varieties smaller than 5x5 should not be packed.

6—*Crabapples*: (a) Crabapples should be shipped in apple boxes only, unless otherwise specified. (b) Double line the boxes and fill in. (c) Care should be taken by those filling in boxes to keep out all imperfect fruit; boxes, after being well shaken down and nailed up, should have from 1 to 1½-inch bulge, counting top and bottom. (d) Never mix varieties.

7—*Peaches*: (a) Pack direct from picking pail or basket into two, three or more boxes if the fruit does not run uniform in size. (b) The folded ends of the paper on wrapped peach should go down, as a cushion for the fruit to rest on. (c) In packing, the boxes should rest on an incline, with the lower end to the packer. The peaches in the top tier should rest in the spaces between the peaches in the lower tier, so that no peach will rest squarely on top of another. (d) In packing the larger sizes, both tiers should be carried forward together, so as to regulate the height

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of the pack. (e) The stem of the peach should always be packed down. (f) Each box should show a bulge not to exceed $\frac{3}{4}$ inch. (g) The packed box should never be accepted by warehouse where the fruit is loose and the box rattles. (h) All peaches that go five across the end of the box or smaller should be packed in a 3x3 pack. Those larger than five across the end of box should be packed 3x2. (1) 3x3 Pack—Place first peach in lower left-hand corner, the other two to be so placed that the space between the first and second and second and third will be the same size as that between the lower right-hand corner of box and the third peach. Place the next three peaches in the spaces formed by the placing of the first three, continuing the pack in the same manner until the tier is finished, always taking pains to see that the spaces are the same size and the alignment of the fruit is perfect. In starting the second tier begin on the opposite side of the box and pack directly over the spaces formed by packing of the first tier. (2) 2x3 Pack—Start the box with the two and then the three. Place the first two peaches so that the spacing between the peaches and the two corners of the box will be the same as that between the peaches. Place the three peaches in the spaces provided by the placing of the first two. Continue the pack in the same manner, remembering always to keep the spaces the same size and alignment perfect. Pack the second tier directly over the spaces formed by the packing of the first tier.

8—Pears: (a) Two or more boxes should be used in packing pears. (b) Always pack direct

from box into which fruit has been sorted, never from a canvas table. (c) Bartletts and Flemish Beauties should weigh, when packed and nailed up, 52 pounds. A variation of from 51 to 53 pounds is permissible if pack is good. (d) The Clapps Favorite, which is a lighter pear, should weigh when nailed up from 49 to 51 pounds; nothing under 49 pounds should be accepted by the nailer. Those over 51 and not to exceed 52 pounds may be accepted if pack is good and lid will go on without cutting or mashing fruit. (e) Buerre d'Anjou and Comice should weigh from 48 to 50 pounds. (f) Winter Nelis should be packed 5 tier deep, never 6. The smaller sizes will be light, often not over 16 pounds, but are acceptable if the pack is tight. (g) The weight of the packed box should be regulated by the firmness with which pears are placed in the tier. (h) The large 3x2s and 3x3s should be packed loosely, while the smaller sizes should be packed tightly. All 4x3 packs should be tight. (i) Care should be taken by nailer not to cut or crush any of the fruit along the edges of the box; all such fruit should be removed and replaced by good pears. (j) The proper way to place pear in the box—in starting the tiers of any pear pack, the first row along the end of the box should be laid with the blossom end of fruit toward the end of box, and with the stem pointing directly away from the packer and slightly down; the remaining pears of each tier should be so placed that the stem will be pointing directly toward packer and slightly up. (k) Never line pear boxes. (l) The first tier should always be packed with the smooth wrap of the paper down, that is, the bottom of the box should always be faced so that the nailed up box will present a neat appearance. (m) The 3x2, 3x3 and 4x3 packs should be used in the packing of pears. (1) 3x2 Pack—All 3x2 pear packs should be four tiers deep. Start the pack with three pears, placing them in the lower end of box in such a way that there will be one in each corner and one in the center. Place the next two in the spaces provided by the packing of the first three; continue pack in the same manner until the tier is finished, remembering always to keep spaces the same size and the alignment perfect. Pack second tier over first tier spaces, third tier over second tier spaces, and fourth tier over third tier spaces. (2) 3x3 Pack—This pack should always be five tiers deep. In starting 3x3 pack, place the first pear in lower left-hand corner of box, the other two to be so placed that the distance will be the same between the first and second and second and third as that between the third pear and lower right-hand corner of box. The next three pears are placed in the spaces provided by the placing of the first three, and continue the pack in the same manner until the tier is finished, remembering always to keep the spaces the same size and the alignment perfect. The second tier is to be packed over the first tier spaces, the third over the second tier spaces, the fourth over the third tier spaces, and the fifth or last tier over the fourth tier spaces. (3) 4x3 Pack—This pack should always be five tiers deep. In starting the 4x3 pack, place a pear in each of the two lower corners, the next two to be so placed that the spaces between the two corner pears and the two inner pears will be the same size

as the space between the two center pears. Place the three pears in the spaces provided by the placing of the first four. Continue to pack in the same manner until the tier is finished, remembering always to keep the spaces the same size and the alignment of the fruit perfect. Pack the second tier in the first tier spaces, third in the second tier spaces, fourth over third tier spaces, and fifth over fourth tier spaces.

9—Apples: (a) From two to five boxes should be used when packing apples. (b) Always pack direct from orchard or peach box into which apples have been sorted, never from a canvas table. (c) A box should be placed in a convenient position to receive the odd sized apples, for which no box has been started. There are twenty or more different apple packs, so it will readily be seen that all the different sizes cannot be packed at one time. (d) All apples should be packed on cheek, with the stem directly from the packer. Never allow the apples to slip sideways, as that brings the stem of one apple in contact with

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the side of another, often causing punctures; it also fills up the spaces and changes the alignment of the fruit. (e) To regulate the height of apples on end of box, place the end apples in the box in such a manner that the shortest diameter from cheek to cheek will come directly up and down; after packing the first two rows next to end of box in such a manner, apples may be turned so the greatest diameter from cheek to cheek will be up and down. If packed in this way the box when finished will have a good bulge and the ends will not be too high. (f) A bulge of from 1 to 1½ inches on all packed boxes, counting top and bottom, is required. (g) Loosely packed boxes, as well as those that are too high, should not be received at warehouse except for a repack. (h) Apple packs: 2x1, 2x2, 3x2 and 5-tier straight. (1) The 2x1 pack takes care of all those apples that are larger than three across the end of box. Pack should be three tiers deep. Start the box with the two, one in each lower corner of box next to packer. Place the one in the space between the two corner apples; then place next two in the spaces on either side of the one. Continue pack until tier is finished, always remembering to keep stems directly from packer, spaces same size, apple on cheek, the alignment perfect, and the apples in their tier firmly held in place by the pack. The second tier is to be packed over the first tier spaces, and the third over the second tier spaces. (2) The 2x2 pack takes care of all apples larger than four across the end of box and those that are just large enough to go three across end. They should always be four tiers deep. Place first apple in lower left-hand corner of box, the next to be so placed that the space between it and the first apple and the space between it and the lower right-hand corner of the box will be the same size. The next two apples to be placed in the spaces provided by the placing of the first two. Continue pack in the same manner until tier is finished, always remembering to keep stems directly from the packer, spaces the same size, apples on cheek, the alignment perfect and the apples in the tier firmly held in place by the pack. The second tier should be placed over the first tier spaces, the third over second tier spaces, and the fourth over third tier spaces. (3) The 3x2 pack takes care of those apples larger than five across the end of box and up to and including those that will just go four across the end. Place first three apples in lower end of box next to packer in such a manner that there will be one in each corner of the box and one in the center. The next two to be placed in the spaces provided by the placing of the first three. Continue the pack in the same manner, always remembering to keep the stems directly from packer, apples on cheek, spaces the same size, alignment perfect, and the apples in the tier held firmly in place by the pack. The second tier should be packed over the first tier spaces, the third over second tier spaces, the fourth over third tier spaces, and the fifth or last tier over fourth tier spaces. (4) The 5-tier straight pack takes care of all those apples that are just large enough to pack five across the end of the box. It is the only apple pack to be used where one apple rests squarely on top of another apple.

10—Nailing Up: (a) The nailer should be thoroughly familiar with the rules, because he is the last person to handle the box before the lid is nailed on. It should be his place to turn back to the packer those boxes that are not properly packed; those that are too high or too low, or those in which the pack has been changed. He should also be able to tell whether the sizes are mixed, and if so send them back for repack. Unattractive packs, that is, those in which the fruit has been poorly wrapped, should not be accepted by him. (b) Care should be taken by the nailer not to injure the fruit in the packed box by the manner in which he nails it up.

11—Tiering on Ranch: (a) Wherever possible the nailer should stack the nailed up boxes away in such a manner that each size, grade and variety will be separate. (b) The 10-lb. cherry boxes should be stacked with top down. (c) Apples and pears should always be stacked on side, with all the markings one way. (d) Prune crates, strawberry crates and peach boxes should always be stacked so that the weight comes on the cleats. All stamped ends should be one way in stack.

12—Hauling Into Warehouse: In loading wagon with fruit to be taken to warehouse or to a car, each load should contain boxes of the same size, grade and variety, as far as possible; that is, do not mix sizes, grades and varieties in a load if a load can be made up otherwise. There are certain places in the warehouse marked off for each variety, each size and each grade. If in making deliveries to the warehouse two or more varieties, two or three grades of each variety, and six or ten sizes of each grade are made in the same load, there can be only a few boxes to go into each stack. Consequently, when fruit is loaded into car only a few boxes of that one load can be run into it, and when returns are made on the fruit it will be found that the one load may be divided into eight, ten or even more parts and sent out in that many different shipments.

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PEACHES

Time Picked in Each District as Shown by the Following

Variety	White Bluffs, Hanford and Kennewick	Parker and Donald	Zillah, Granger, Sunnyside, Grandview and Prosser	North Yakima	Selah and Naches	Color Inside Flesh
Admiral Devey	7-19 to 8-13	7-26 to 8-14	7-18 to 8-19	7-24 to 8-10	8-29	Yellow
Alexander	7-19 to 8-9	7-26 to 8-12	8-10 to 8-21	7-30 to 8-5	8-14	White
Alton	7-19	7-26 to 8-12	7-18 to 7-23	8-6 to 8-31	8-14	White
Arp Beauty	8-3 to 8-30	8-9 to 9-12	8-20 to 8-27	8-6 to 8-31	8-14	Yellow
Belle of Georgia	7-20 to 8-23	7-26 to 8-19	7-31 to 8-28	8-6 to 8-28	8-10 to 8-23	White
Bernard	8-3 to 8-26	8-9 to 8-14	8-13 to 8-28	7-26 to 7-29	8-8 to 8-28	White
Charlotte	8-22 to 8-23	8-2	8-24	8-17	8-18	White
Columbia	7-23 to 8-23	8-2 to 9-9	8-8 to 8-29	8-9 to 9-3	8-18	Yellow
Crosby	7-17 to 8-6	7-19	8-2 to 8-8	8-22 to 9-11	8-18 to 9-28	Yellow
Early Crawford	8-13 to 9-4	8-17 to 9-4	8-22 to 9-11	8-18 to 9-28	8-28 to 9-28	Yellow
Early Elberta	8-10 to 8-25	8-9 to 8-25	8-20 to 8-30	8-14	8-22	Yellow
Early Rivers	8-10 to 8-25	8-9 to 8-25	8-20 to 8-30	8-14	8-22	Yellow
Elberta	8-10 to 8-25	8-9 to 8-25	8-20 to 8-30	8-14	8-22	Yellow
Emma	8-10 to 8-25	8-9 to 8-25	8-20 to 8-30	8-14	8-22	Yellow
Foster	8-10 to 8-25	8-9 to 8-25	8-20 to 8-30	8-14	8-22	Yellow
Golden Cling	8-10 to 8-25	8-9 to 8-25	8-20 to 8-30	8-14	8-22	Yellow
Greensboro	7-20 to 7-30	7-16 to 7-31	7-16 to 8-2	7-16 to 8-16	8-29	White
Hales Early	8-23 to 9-3	8-24	8-21 to 9-11	8-29 to 9-5	9-10	Red
Indian Cling	8-23 to 9-3	8-24	8-21 to 9-11	8-29 to 9-5	9-10	Yellow
Krummel October	8-23 to 9-3	8-24	8-21 to 9-11	8-29 to 9-5	9-10	Yellow
Late Crawford	8-23 to 9-3	8-24	8-21 to 9-11	8-29 to 9-5	9-10	Yellow
Lemon Cling	8-23 to 9-3	8-24	8-21 to 9-11	8-29 to 9-5	9-10	Yellow
Lovell	8-23 to 9-3	8-24	8-21 to 9-11	8-29 to 9-5	9-10	Yellow
Malta	8-23 to 9-3	8-24	8-21 to 9-11	8-29 to 9-5	9-10	Yellow
Mammoth Heath Cling	8-23 to 9-3	8-24	8-21 to 9-11	8-29 to 9-5	9-10	Yellow
Mamie Ross	8-23 to 9-3	8-24	8-21 to 9-11	8-29 to 9-5	9-10	Yellow
Muir	8-23 to 9-3	8-24	8-21 to 9-11	8-29 to 9-5	9-10	Yellow
Newhall	8-23 to 9-3	8-24	8-21 to 9-11	8-29 to 9-5	9-10	Yellow
Onset Cling	8-23 to 9-3	8-24	8-21 to 9-11	8-29 to 9-5	9-10	Yellow
Red Bird Cling	8-23 to 9-3	8-24	8-21 to 9-11	8-29 to 9-5	9-10	White
Red May	8-23 to 9-3	8-24	8-21 to 9-11	8-29 to 9-5	9-10	White
Starks Heath Cling	8-23 to 9-3	8-24	8-21 to 9-11	8-29 to 9-5	9-10	White
St. Johns	8-23 to 9-3	8-24	8-21 to 9-11	8-29 to 9-5	9-10	Yellow
Salway	8-23 to 9-3	8-24	8-21 to 9-11	8-29 to 9-5	9-10	Yellow
Slappy	8-23 to 9-3	8-24	8-21 to 9-11	8-29 to 9-5	9-10	Yellow
Triumph	8-23 to 9-3	8-24	8-21 to 9-11	8-29 to 9-5	9-10	Yellow
Victors	8-23 to 9-3	8-24	8-21 to 9-11	8-29 to 9-5	9-10	Yellow
White Elberta	8-23 to 9-3	8-24	8-21 to 9-11	8-29 to 9-5	9-10	White
Worth	8-23 to 9-3	8-24	8-21 to 9-11	8-29 to 9-5	9-10	Yellow
Waddell	8-23 to 9-3	8-24	8-21 to 9-11	8-29 to 9-5	9-10	White

CRAB APPLES

Time Picked in Each District as Shown by the Following

Variety	White Bluffs, Hanford and Kennewick	Parker and Donald	North Yakima	Zillah, Granger, Buena, Sunnyside, Grandview, Donald, Prosser	Selah and Naches	Color
Florence (small)	8-3 to 9-3	8-3 to 9-3	8-3 to 9-3	8-3 to 9-3	8-3 to 9-3	Yellow striped
Hyslop (medium)	8-3 to 9-3	8-3 to 9-3	8-3 to 9-3	8-3 to 9-3	8-3 to 9-3	Deep red
Siberian (small)	8-3 to 9-3	8-3 to 9-3	8-3 to 9-3	8-3 to 9-3	8-3 to 9-3	Yellow blushed
Transcendent (medium)	7-25 to 8-10	8-2	8-16 to 9-3	7-26 to 8-12	8-10 to 8-18	Yellow blushed
Whitney (very large)	8-9 to 8-14	7-31 to 8-22	7-31 to 8-22	7-31 to 8-2	8-12 to 8-18	Yellow, red striped

APRICOTS

Variety	White Bluffs, Hanford and Kennewick	Parker and Donald	North Yakima	Zillah, Granger, Buena, Sunnyside, Grandview, Donald, Prosser	Selah and Naches	Color
Moorpark (very large)	7-17 to 7-27	7-26	7-24 to 8-16	7-19 to 8-12	8-10 to 8-18	Yellow blushed
Royal (large)	7-17	7-15	7-15 to 8-3	7-19 to 8-12	8-10 to 8-18	Dull yel., mot. br.
Russian (small)	7-17 to 8-2	7-15	7-15 to 8-3	7-19 to 8-12	8-10 to 8-18	Yellow
Tilton (large)	7-17	7-15	7-15 to 8-3	7-19 to 8-12	8-10 to 8-18	Yellow
Yakanine (very large)	8-14	7-26	7-24 to 8-16	7-19 to 8-12	8-10 to 8-18	Gr. yel., cov. br.
Nectarines	8-14	7-26	7-24 to 8-16	7-19 to 8-12	8-10 to 8-18	Gr. yel., cov. br.

PLUMS

Time Picked in Each District as Shown by the Following

Variety	White Bluffs, Hanford and Kennewick	Parker and Donald	North Yakima	Zillah, Granger, Buena, Sunnyside, Grandview, Donald, Prosser	Selah and Naches	Color
Abundance (large)	8-1 to 8-28	8-1 to 8-28	8-9	8-1 to 9-1	8-23 to 8-31	Bright red
Blackhaw (medium)	8-1 to 8-28	8-1 to 8-28	8-9	8-1 to 9-1	8-23 to 8-31	Bluish purple
Burlbank (large)	8-1 to 8-28	8-1 to 8-28	8-9	8-1 to 9-1	8-23 to 8-31	Mot. red and yel.
Combination	8-1 to 8-28	8-1 to 8-28	8-9	8-1 to 9-1	8-23 to 8-31	Deep purple
Danson (small)	8-1 to 8-28	8-1 to 8-28	8-9	8-1 to 9-1	8-23 to 8-31	Purple
French Plum (med. to small)	8-1 to 8-28	8-1 to 8-28	8-9	8-1 to 9-1	8-23 to 8-31	Golden yellow
Gold (medium)	8-1 to 8-28	8-1 to 8-28	8-9	8-1 to 9-1	8-23 to 8-31	Green
Green Gage (medium)	8-1 to 8-28	8-1 to 8-28	8-9	8-1 to 9-1	8-23 to 8-31	Red and yellow
Hungarian (very large)	8-22 to 9-6	8-16 to 9-12	8-26 to 9-12	8-12 to 9-5	8-28 to 9-14	Purple
Italian (medium)	8-22 to 9-6	8-16 to 9-12	8-26 to 9-12	8-12 to 9-5	8-28 to 9-14	Purple
Pacific	8-22 to 9-6	8-16 to 9-12	8-26 to 9-12	8-12 to 9-5	8-28 to 9-14	Purple
Peach Plum (very large)	7-25 to 7-27	8-16 to 8-2	7-20 to 8-3	7-18 to 8-3	7-18 to 8-3	Red and yellow
Red June (medium)	7-25 to 7-27	8-16 to 8-2	7-20 to 8-3	7-18 to 8-3	7-18 to 8-3	Red
Silva	8-26 to 9-6	8-24 to 9-4	8-19 to 9-12	8-23 to 9-2	9-12	Light yellow
Silver Plum (large)	8-26 to 9-6	8-24 to 9-4	8-19 to 9-12	8-23 to 9-2	9-12	Trans. yellow
Shiro (medium)	8-26 to 9-6	8-24 to 9-4	8-19 to 9-12	8-23 to 9-2	9-12	Blue
Tenent (medium)	8-26 to 9-6	8-24 to 9-4	8-19 to 9-12	8-23 to 9-2	9-12	Purple
Tragedy (med. to large)	8-26 to 9-6	8-24 to 9-4	8-19 to 9-12	8-23 to 9-2	9-12	Blue
Washington (med. to large)	8-26 to 9-6	8-24 to 9-4	8-19 to 9-12	8-23 to 9-2	9-12	Blue
Wilson	8-26 to 9-6	8-24 to 9-4	8-19 to 9-12	8-23 to 9-2	9-12	Blue
Williamette	8-26 to 9-6	8-24 to 9-4	8-19 to 9-12	8-23 to 9-2	9-12	Blue
Yellow Egg (very large)	8-26 to 9-6	8-24 to 9-4	8-19 to 9-12	8-23 to 9-2	9-12	Light yellow

MISCELLANEOUS

Time Picked in Each District as Shown by the Following

Variety	White Bluffs, Hanford and Kennewick	Parker and Donald	North Yakima	Buena, Granger, Zillah, Emerald, Prosser, Grandview, Sunnyside	Selah and Naches
Asparagus	4-2 to 6-12	8-26	8-9 to 9-14	8-9 to 9-14	8-18
Gates	8-26	8-9	8-9 to 9-14	8-9 to 9-14	8-18
Egg Plants	8-26	8-9	8-9 to 9-14	8-9 to 9-14	8-18
Sweet Corn	8-26	8-9	8-9 to 9-14	8-9 to 9-14	8-18
Cucumbers	8-26	8-9	8-9 to 9-14	8-9 to 9-14	8-18
Tomatoes	8-26	8-9	8-9 to 9-14	8-9 to 9-14	8-18
Watermelon	8-12	8-13 to 9-7	8-13 to 9-7	8-13 to 9-7	8-18
Quince	8-12	8-13 to 9-7	8-13 to 9-7	8-13 to 9-7	8-18
Strawberries	5-14 to 6-4	5-18 to 5-24	5-18 to 5-24	5-18 to 5-24	5-18 to 5-24
Gooseberries	5-18 to 5-24	5-18 to 5-24	5-18 to 5-24	5-18 to 5-24	5-18 to 5-24

GRAPES

Variety	White Bluffs, Hanford and Kennewick	Parker and Donald	North Yakima	Buena, Granger, Zillah, Emerald, Prosser, Grandview, Sunnyside	Selah and Naches
Banner	9-6	9-6	9-6	9-6	9-6
Black Hamburg	9-6	9-6	9-6	9-6	9-6
Brighton	9-6	9-6	9-6	9-6	9-6
Campbell Early	9-6	9-6	9-6	9-6	9-6
Catawba	9-6	9-6	9-6	9-6	9-6
Concord	9-6	9-6	9-6	9-6	9-6
Delaware	9-6	9-6	9-6	9-6	9-6
Early Shasta	9-6	9-6	9-6	9-6	9-6
Muscats	9-6	9-6	9-6	9-6	9-6
Moore's Early	9-6	9-6	9-6	9-6	9-6
Malrose	9-6	9-6	9-6	9-6	9-6
Mammoth	9-6	9-6	9-6	9-6	9-6
Niagara	9-6	9-6	9-6	9-6	9-6
Ross Chessel	9-6	9-6	9-6	9-6	9-6
Sweet Water	9-6	9-6	9-6	9-6	9-6
White Wimmer	9-6	9-6	9-6	9-6	9-6
Tokay Flame	9-30	9-30	9-30	9-30	9-30
Thompson Seedless	9-25	9-25	9-25	9-25	9-25

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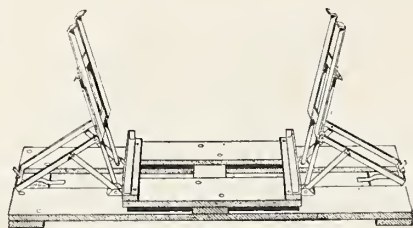
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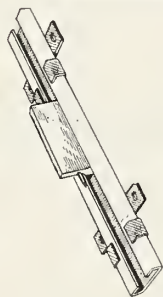
Perfection Lid Press

The most practical lid press because it has more leverage power than foot presses. Is more durable and cannot get out of order. Occupies less space and can be used on any bench or couple of boxes.

Covers are held in position before pressing. Pressing frame is made from toe-calk steel. Weighs less than 30 lbs. and can be folded flat.

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Attach to the side of an apple box in a minute and will hold from one sheet to one full bundle of paper.

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SPECIFICATIONS FOR BOX MATERIAL AND NAILS

4-INCH PEACH BOXES
Ends— $\frac{3}{4}$ x4x11 $\frac{1}{2}$, two pieces..... 50 to bundle
Sides— $\frac{1}{2}$ x3 $\frac{1}{2}$ x19 $\frac{1}{4}$, two pieces..... 100 to bundle
Top and Bottom— $\frac{1}{2}$ x5 $\frac{1}{2}$ x19 $\frac{1}{4}$, four pieces..... 100 to bundle
Cleats— $\frac{3}{4}$ x $\frac{3}{4}$ x11 $\frac{1}{2}$, two pieces..... 100 to bundle

4 $\frac{1}{2}$ -INCH PEACH BOXES
Ends— $\frac{3}{4}$ x4 $\frac{1}{2}$ x11 $\frac{1}{2}$, two pieces..... 50 to bundle
Sides— $\frac{1}{2}$ x4x19 $\frac{1}{4}$, two pieces..... 100 to bundle
Top and Bottom— $\frac{1}{2}$ x5 $\frac{1}{2}$ x19 $\frac{1}{4}$, four pieces..... 100 to bundle
Cleats— $\frac{3}{4}$ x $\frac{3}{4}$ x11 $\frac{1}{2}$, two pieces..... 100 to bundle
Use cement coated 4d special orange box nails for all peach boxes, 24 nails to box.

PRUNE CRATES
Ends— $\frac{3}{4}$ x4 $\frac{1}{2}$ x16, two pieces..... 40 to bundle
Sides and Bottom— $\frac{3}{4}$ x1 $\frac{1}{2}$ x17 $\frac{1}{2}$, eight pieces..... 200 to bundle
Top— $\frac{1}{2}$ x8x17 $\frac{1}{2}$, two pieces..... 50 to bundle
Cleats— $\frac{3}{4}$ x $\frac{3}{4}$ x16, two pieces..... 100 to bundle
Use cement coated 4d special nails for sides and bottom; 5d for top—32 4d, 8 5d to crate.

CANTALOUPE CRATES
Ends— $\frac{3}{4}$ x11 $\frac{1}{2}$ x12, two pieces..... 20 to bundle
Sides, Top, Bottom— $\frac{3}{4}$ x4x22, eight pieces..... 80 to bundle
Use cement coated 5d regular nails for all cantaloupe crates, 32 nails to crate.

STANDARD APPLE BOXES
Ends— $\frac{3}{4}$ x10 $\frac{1}{2}$ x11 $\frac{1}{2}$, two pieces..... 20 to bundle
Sides— $\frac{3}{4}$ x10 $\frac{1}{2}$ x19 $\frac{1}{4}$, two pieces..... 40 to bundle
Top and Bottom— $\frac{1}{2}$ x5 $\frac{1}{2}$ x19 $\frac{1}{4}$, four pieces..... 100 to bundle
Cleats— $\frac{3}{4}$ x $\frac{3}{4}$ x11 $\frac{1}{2}$, four pieces..... 100 to bundle
Use cement coated 6d regular nails, 32 nails to box.

PEAR BOXES
Ends— $\frac{3}{4}$ x8 $\frac{1}{2}$ x11 $\frac{1}{2}$, two pieces..... 20 to bundle
Sides— $\frac{3}{4}$ x8 $\frac{1}{2}$ x19 $\frac{1}{4}$, two pieces..... 40 to bundle
Top and Bottom— $\frac{1}{2}$ x5 $\frac{1}{2}$ x19 $\frac{1}{4}$, four pieces..... 100 to bundle
Cleats— $\frac{3}{4}$ x $\frac{3}{4}$ x11 $\frac{1}{2}$, four pieces..... 100 to bundle
Use cement coated 6d regular nails, 32 nails to box.

10-POUND CHERRY BOXES
Ends and Center— $\frac{3}{4}$ x2 $\frac{1}{2}$ x9, three pieces..... 75 to bundle
Sides— $\frac{3}{4}$ x16 $\frac{1}{2}$ x19 $\frac{1}{4}$, two pieces..... 100 to bundle
Top and Bottom— $\frac{3}{4}$ x16x3 $\frac{1}{2}$ x9, two pieces..... 50 to bundle
Cleats— $\frac{3}{4}$ x $\frac{3}{4}$ x9, two pieces..... 100 to bundle
Use cement coated 4d special orange box nails, 28 to box

20-POUND CHERRY BOXES
Ends— $\frac{3}{4}$ x4x11 $\frac{1}{2}$, two pieces..... 50 to bundle
Sides— $\frac{1}{2}$ x4x19 $\frac{1}{4}$, two pieces..... 100 to bundle
Top and Bottom— $\frac{1}{2}$ x5 $\frac{1}{2}$ x19 $\frac{1}{4}$, four pieces..... 100 to bundle
Cleats— $\frac{3}{4}$ x $\frac{3}{4}$ x11 $\frac{1}{2}$, four pieces..... 100 to bundle
Use cement coated 4d special orange box nails, 28 to box

RULES FOR ESTIMATING PAPER AND CARDBOARD

	Apples	Pears	Peaches
Wraps for packing 100 boxes	50 lbs.	50 lbs.	25 lbs.
Lining for packing 100 boxes	7 $\frac{1}{2}$ lbs.		
Cardboard for packing 100 boxes	16 lbs.		

RULES FOR USE OF PAPER

APPLES—Use 8x8 for 188 count and smaller; 9x9 for 175 to 125, inclusive; 10x10 for 112 to 80; 12x12 for 72 and larger.

PEARS—Use 12x12 for 100 count and larger, 10x10 for 110 to 165, inclusive; 9x9 for 180 and 193; 8x8 for 210 to 245, inclusive.

PEACHES—Use 8x8 for 84 and smaller; 9x9 for 60 to 78; 10x10 for those larger than 60.

	4d	5d	6d
Cement nails to the keg.....	55,000	39,700	23,600

PEAR PACKS

245.....	4x3 diagonal pack,	7x7 long,	5 tiers deep
228.....	4x3 diagonal pack,	7x6 long,	5 tiers deep
210.....	4x3 diagonal pack,	6x6 long,	5 tiers deep
193.....	4x3 diagonal pack,	6x5 long,	5 tiers deep
180.....	3x3 diagonal pack,	6x6 long,	5 tiers deep
165.....	3x3 diagonal pack,	6x5 long,	5 tiers deep
150.....	3x3 diagonal pack,	5x5 long,	5 tiers deep
135.....	3x3 diagonal pack,	5x4 long,	5 tiers deep
120.....	3x3 diagonal pack,	4x4 long,	5 tiers deep
110.....	3x2 diagonal pack,	6x5 long,	4 tiers deep
100.....	3x2 diagonal pack,	5x5 long,	4 tiers deep
90.....	3x3 diagonal pack,	5x4 long,	4 tiers deep
80.....	3x2 diagonal pack,	4x4 long,	4 tiers deep
70.....	3x2 diagonal pack,	4x3 long,	4 tiers deep
60.....	3x2 diagonal pack,	3x3 long,	4 tiers deep

PEACH PACKS

96.....	3x3 diagonal pack,	8x7 long,	2 tiers deep
84.....	3x3 diagonal pack,	7x7 long,	2 tiers deep
78.....	3x3 diagonal pack,	7x6 long,	2 tiers deep
72.....	3x3 diagonal pack,	6x6 long,	2 tiers deep
65.....	3x2 diagonal pack,	7x6 long,	2 tiers deep
60.....	3x2 diagonal pack,	6x6 long,	2 tiers deep
55.....	3x2 diagonal pack,	6x5 long,	2 tiers deep
50.....	3x2 diagonal pack,	5x5 long,	2 tiers deep
45.....	3x2 diagonal pack,	5x4 long,	2 tiers deep
40.....	3x2 diagonal pack,	4x4 long,	2 tiers deep
36.....	2x2 diagonal pack,	5x4 long,	2 tiers deep

APPLE PACKS

225.....	5 straight pack,	9 long,	5 tiers deep
200.....	5 straight pack,	8 long,	5 tiers deep
213.....	3x2 diagonal pack,	8x9 long,	5 tiers deep
200.....	3x2 diagonal pack,	8x8 long,	5 tiers deep
188.....	3x2 diagonal pack,	7x8 long,	5 tiers deep
175.....	3x2 diagonal pack,	7x7 long,	5 tiers deep
163.....	3x2 diagonal pack,	6x7 long,	5 tiers deep
150.....	3x2 diagonal pack,	6x6 long,	5 tiers deep
138.....	3x2 diagonal pack,	5x6 long,	5 tiers deep
125.....	3x2 diagonal pack,	5x5 long,	5 tiers deep
113.....	3x2 diagonal pack,	4x5 long,	5 tiers deep
120.....	2x2 diagonal pack,	7x8 long,	4 tiers deep
112.....	2x2 diagonal pack,	7x7 long,	4 tiers deep
104.....	2x2 diagonal pack,	6x7 long,	4 tiers deep
96.....	2x2 diagonal pack,	6x6 long,	4 tiers deep
88.....	2x2 diagonal pack,	5x6 long,	4 tiers deep
80.....	2x2 diagonal pack,	5x5 long,	4 tiers deep
72.....	2x2 diagonal pack,	4x5 long,	4 tiers deep
64.....	2x2 diagonal pack,	4x4 long,	4 tiers deep
56.....	2x2 diagonal pack,	3x4 long,	4 tiers deep
48.....	2x2 diagonal pack,	3x3 long,	4 tiers deep
45.....	2x1 diagonal pack,	5x6 long,	3 tiers deep
40.....	2x1 diagonal pack,	5x5 long,	3 tiers deep
41.....	2x1 diagonal pack,	4x5 long,	3 tiers deep
36.....	2x1 diagonal pack,	4x4 long,	3 tiers deep
32.....	2x1 diagonal pack,	3x4 long,	3 tiers deep

PROPER STAMPING FOR APPLES AND PEARS

No. Grower, one line stamp. Variety.

125 JOHN DOE Winesap

Extra Fancy

LABEL (WHEN USED)

PROPER STAMPING FOR PEACH BOXES

No. Grower, one line stamp. Variety.

65 JOHN DOE Elberta

LABEL (WHEN USED)

Grower's large individual stamp when used should go in the center on the opposite end of box from number and variety stamps. Packer's stamp should be placed in the center at the top, just above the grower's individual stamp. This applies to all fruit packages shipped.

INDIVIDUAL STAMP AND PACKER'S NUMBER STAMP

Packer No. 1

Grown and Packed by
JOHN DOE
North Yakima, Wash.

Standardization

There is a strong effort among all the different concerns handling fruit, particularly in the Northwest, this year to come as near as possible to standardizing the output. While perhaps the packing and grading rules of some of the different concerns may vary to some extent, still it is the belief that they will be comparatively uniform.

The Nova Scotia Apple Crop

The Nova Scotia apple crop for 1913 will be far below normal, cold wet weather at blossoming time and June frosts having inflicted much damage. Where the trees escaped they are receiving careful attention, cultivation and spraying being carried on to an extent surpassing that of any other year. Many motor sprays have been purchased by the fruitgrowers of Annapolis Valley, which are proving very satisfactory. The varieties of apples which promise best this season are Greenings, Fallawaters, Kings, Ribstons and Starks, while Gravensteins and Baldwins will be very short. The apple yield in 1912 was 1,000,000 barrels, a much smaller crop than in 1911.

Almost the whole world knows of Hood River as a place that produces the best fruits, and all of Hood River Valley should know, and could know, that there is one place in Hood River, under the firm name of R. B. Bragg & Co., where the people can depend on getting most reliable dry goods, clothing, shoes and groceries at the most reasonable prices that are possible. Try it.

[Advertisement]



Did you have Spray troubles last season? Some growers had very serious ones.

WHAT'S THE USE?

Why risk your crop by using new and untried preparations? Let your Experiment Station do the experimenting.

Why not use an ARSENATE OF LEAD that has successfully weathered the varied climatic conditions of Washington, Oregon, Idaho and Montana the past four years?

The Grasselli Brand Has Done This

IF IN DOUBT

Ask your local or state authorities. They are best qualified to advise as to local conditions.

A FEW OF OUR DISTRIBUTERS:

Cashmere Fruit Growers' Union . . .	Cashmere, Washington
Denney & Co.	Payette, Idaho
Hood River Apple Growers' Union . . .	Hood River, Oregon
Hardie Manufacturing Company . . .	Portland, Oregon
Inland Seed Company	Spokane, Washington
Plough Hardware Company	Wenatchee, Washington
Rogue River Fruit and Produce Association	Medford, Oregon
C. J. Sinsel	Boise, Idaho
Yakima County Horticultural Union . .	North Yakima, Washington
Zillah Fruit Company	Zillah, Washington
Provincial Fruit Inspector	Vancouver, B. C.

MANUFACTURED BY

The Grasselli Chemical Co.

CLEVELAND, OHIO

Made in Oregon



PICKERS-PRUNERS BASTIAN

How much good fruit do you lose?

Are you satisfied to lose it?

If not, get the Picker that will save it—Bastian's—the only one that picks as well as by hand.

PRUNERS—If you want to save time and money, get Bastian's, the most powerful and easily operated pruners on the market. Hooks for heavy work; shears for light work. Standard length: Pruners, 5 to 16 feet; Shears and Pickers, 5 to 12 feet.

For sale by all the best dealers

MANUFACTURED BY

Storey Manufacturing Co.

214 Front Street, PORTLAND, OREGON

**SHIP YOUR APPLES TO THE PIONEER
BOX APPLE HOUSE OF BALTIMORE**

F. BORDERS SON CO.

**Yours for Quick, Efficient, Profitable Service
U. GRANT BORDER, President**

What the Apple Men Did at the Cleveland Convention

Report of the International Apple Shippers' Meeting, by H. L. Rodenbaugh

THE nineteenth annual convention of the International Apple Shippers' Association has passed into history, and now that it is over all of the delegates feel free to say that with-

out exception it was the greatest convention of its kind ever held in the history of the association. Cleveland exerted itself to make things pleasant for the visitors, and after hearing the

pleasant remarks of the leave-taking visitors they feel that their time and labor was not ill spent.

The officers for the ensuing year were elected by unanimous consent, and are as follows: President, R. H. Pennington; vice-president, E. W. J. Hearty; secretary, R. G. Phillips; treasurer, W. M. French; Executive Committee, A. W. Patch, E. N. Loomis, D. N. Minick, C. B. Shafer and L. K. Sutton. State vice-presidents: Arkansas, H. Y. King; California, Edmund Peycke; Colorado, J. H. Hensley; Liverpool, George Shuttleworth; Hamburg, Carl Basedow; Idaho, George E. Crum; Illinois, F. H. Simpson; Chicago, N. G. Gibson; Indiana, J. G. Schlotter; Iowa, O. B. West; Kansas, George C. Richardson; Kentucky, John H. Hile; Louisiana, George W. Davison; Tennessee, D. Canale; Massachusetts, Walter Wehling; Maine, F. A. Wing; Maryland, Walter Snyder; Michigan, C. L. Randall; Minnesota, C. R. Stacy; Missouri, George P. Schopp; Nebraska, Charles Dickinson; New Jersey, Alfred J. Repp; New York, P. D. Beckwith; New York City, C. W. Kimball; Ohio, M. O. Baker; Ontario, William Dixon; Oregon, E. H. Shepard; Pennsylvania, D. N. Minnick; Philadelphia, E. W. Butterworth; Utah, W. M. Roylance; Virginia, E. A. Jennings; West Virginia, J. M. McCoach; Washington, F. H. Thompson; Wisconsin, R. Stafford; Nova Scotia, H. Oyler.

The convention opened promptly at 10 A. M. at Hotel Statler. Rev. Worth M. Tippy, of Cleveland, pronounced the invocation and the business session was opened; Newton T. Baker, mayor of Cleveland, extended the freedom of the city to the visitors and Mr. Keach, of Indianapolis, responded for the association. After the ceremonies had been completed President Loomis called for the singing of the hymn of the association entitled, "To the Apple." The words of the song were written by Frank J. Price and they were sung to the air of the favorite German melody, "Die Wacht am Rhein." After the singing was over Homer McDaniel announced the entertainment program for the ladies during their stay in the city. This was followed by the reading

**Shippers of Fancy Western Box
Apples, Peaches
Plums and Pears**

MYERS, WEIL & CO.

DISTRIBUTORS OF

**Western Box Apples, Peaches, Plums, Pears, Etc.
750 Broadway, CLEVELAND, OHIO**

desiring reliable quotations and information concerning conditions in the sixth largest market in the United States, communicate with us promptly.

SPECIAL FEATURES — Absolute Financial Responsibility, Competent Service. No house in any market excels us in making prompt remittances when shipments are sold. Always glad to make liberal advances on consignments.

TREES

The kind that make you our friend together with the low surplus prices of the last season should induce you to let us figure on your needs for next season. We can and will please you. Every tree guaranteed well bred, clean and first-class. *Write Now.*

**Southern Oregon Nursery
YONCALLA, OREGON**

RELIABLE TREES

For British Columbia

We offer for the coming season the most complete and best selected stock of both **FRUIT AND ORNAMENTAL TREES** in the country. If you want home grown, first-class stock, handled under closest observation of all details which long experience alone can teach, you are the man we want to supply. Write today for prices or see our representative in your section.

**LAYRITZ NURSERIES
Victoria, British Columbia**

of communications from Samuel Lux, of Topeka, Kan., president of the Western Fruit Jobbers' Association, and from John H. Hile, of Louisville, Ky., chairman of the membership committee, expressing their regrets over their inability to attend the session. A wire from Washington, D. C., also was read at this time announcing that the duty of ten cents per bushel of 50 pounds would probably go into effect by September 15.

President Loomis of the association then entertained the assemblage with a few remarks. He referred to the fact that the association had grown from a membership of 12 to 550 in 19 years, and that the membership extended to all parts of Canada and the United States. He advocated that the membership be limited strictly to those engaged as merchants or those who take part in the actual distribution of apples. Mr. Loomis recommended that a law fixing a standard box for packing apples be enacted, but as to the contents and requirements of the law, he said, he believed that matter ought to be left to the shippers of the Northwest. He spoke approvingly of the Sulzer law, and remarked that the members must not handle any apples packed contrary to the provisions of that law. He also endorsed the Tuttle law, now before Congress, requiring a standard barrel for packing apples and vegetables. A review of the work of the executive committee and of the secretary's followed in his remarks, and he paid many complimentary remarks to the secretary in regard to the distribution of the monthly crop reports. Mr. Loomis is a firm believer in advertising. A strong statement followed in regard to the monopolistic attitude of the Bell Telephone Company. Mr. Loomis closed with an appeal to the members to carefully consider a reasonable price for the purchase of apples. The president also included in his remarks respects to the memories of C. H. Bahrenburg of New York, C. F. Love of Chicago, A. S. Block of St. Louis and Isaac Tuck of New York, who had passed away during the year.

Other interesting features on the program during the first day's session was the report of the executive committee through Chairman A. W. Patch. A report of Committee on Apple Show Premiums by Chairman Frank E. Wagner. Talks of "Our Friends" by J. J. Castellini, president of the National League of Commission Merchants of the United States and by W. T. Tidwell, who spoke in place of S. E. Lux. This talk was followed by a report of Secretary R. G. Phillips.

Secretary Phillips in his report stated that 56,000 letters in regard to the crops had been received during the year. He reviewed the work done in legislative matters and spoke very favorably of the Sulzer law, which he said would be strictly enforced. He called attention to the advertising work done by Mr. Coyne, Mr. Erb and Mr. Border. The membership has shown a healthy growth, he further stated, and the records show an increase of 83 during last

Arcadia Irrigated Orchards

The largest and most successful orchard project in the entire West

7,000 acres planted to winter apples. Gravity irrigation. Located 22 miles north of Spokane, Washington, directly on the railroad. We plant and give four years' care to every orchard tract sold. \$125, first payment, secures 5 acres; \$250, first payment, secures 10 acres; balance monthly.

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Arcadia Orchards Company

Deer Park, Washington



Real Estate

Twenty-five years' residence in Hood River. Write for information regarding the Hood River Valley. Literature sent upon request. Address all communications to

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MANURE IN CAR LOTS

Stockyards manure in car lots, \$1 per ton, f.o.b. cars, North Portland. Book your orders early.

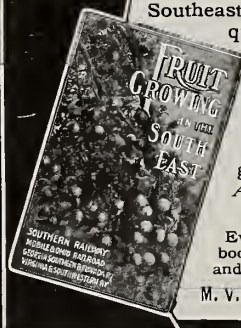
PORTLAND UNION STOCKYARDS CO.
North Portland, Oregon

Growers of a full line of nursery stocks, etc. Apples, pears, prunes, peaches and cherries. Send in your want list and secure prices.

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Carlton, Oregon

The Favored Fruit Region of the World

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this Free
Booklet



The Appalachian Mountain section in the states of Virginia, Tennessee, Western North Carolina, Northern Georgia, and Alabama possess advantages unequaled anywhere in the world for the growing of fruit, and especially for apples. The long growing season, gentle, abundant rains, and sunny days give Southeastern fruit a distinctive color and flavor making it the highest quality in both European and American markets.

Apple Lands at \$15 to \$50 per acre

Mountain cove land (the very best for apples) in many places can be purchased from \$15 to \$50 an acre. The short haul (12 to 24 hours) to the great Central and Eastern markets and Atlantic ports gives the Southern fruit grower a great advantage over those in distant sections. Apple Orchards pay from \$100 to \$500 an acre up.

Send Now for the Fruit Booklet.

Everyone interested in fruit growing locations should have a copy of the booklet here illustrated. Other literature about the Southeastern States and copies of the Southern Field, a bi-monthly magazine, sent free.

M. V. RICHARDS, Land & Industrial Agt., Southern Ry., Room 13 Washington, D. C.

KEEP BEES AND Bees PAY in the increased yield of your orchard. Write for full particulars to

GET MORE FRUIT

THE A. I. ROOT CO.

Box 358

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YOU CAN MAKE \$20.00 A DAY

AND JUST ONE MAN ON THE JOB WITH A

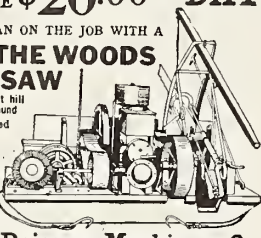
KING OF THE WOODS

DRAG SAW

Pulls itself up the steepest hill and over the roughest ground. One man writes he sawed 66 ricks in 10 hours. Another sawed 40 cords in 9 hrs. Another sawed 36 cords in a day.

Another writes his machine will climb a tree. THERE IS MORE YOU SHOULD KNOW.

Write for Testimonials and Catalog D-1



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Manufacturers, PORTLAND, OREGON.

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EVERYTHING TO WEAR

AGENTS FOR

HAMILTON & BROWN AND
THE BROWN SHOES

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NEMO CORSETS

Strictly Cash—One Price to All

Hood River Grown Nursery Stock for Season 1913-1914

Standard Varieties

Prices Right and Stock First Class

C. D. THOMPSON, Hood River, Oregon

Vehicles and Agricultural Implements

THE BEST OF
ORCHARD AND GARDEN TOOLS
A SPECIALTY

Gilbert Implement Co.

HOOD RIVER, OREGON

year and 58 this year. The cash on hand is \$4100 and all bills paid. Mr. Phillips' remarks were followed by a report of the treasurer, W. M. French, which showed the finances of the association in excellent condition. Before closing the morning session President Loomis appointed Messrs. Dreyfuss and Sellmeyer as sergeant-at-arms and also a "get together" committee consisting of C. A. Kerr, William L. Wagner, R. H. Pennington, R. G. Phillips, E. N. Loomis and C. H. Williamson.

At the opening of the afternoon session R. S. French, business manager of the National League of Commission Merchants, entertained the delegates with a short talk and wound up by extending an invitation to all those present to attend their convention at Jacksonville, Fla., in January. This talk was followed by a report of the Legislative Committee through the chairman, C. B. Shafer, of Gasport, N. Y. He said that more adverse bills had come up for passage during the past year than ever before. The bills he discussed covered packages, transportation, storage, exporting, etc. William G. Burrows made a strong talk and asked the co-operation of the association in bringing about One Cent Letter Postage. A lively discussion followed the report of Chairman William L. Wagner of the Storage in Transit Committee. In his report Mr. Wagner gave a list of names of cities which are now granted storage in transit in addition to those which already have that privilege. J. L. Keach, of Indianapolis, made strenuous objections to the committee's report and said that certain cities such as Indianapolis were being discriminated against, and advised applying to the Interstate Commerce Commission for a remedy. F. H. Simpson, of Flora, Ill., answered the Indiana man and greatly objected to taking the matter before the Commerce Commission, and stated that this action might hinder the work. R. S. French also spoke against taking the matter up to the commission, but Mr. Keach was wont to give up his point and put the matter to a vote. But Secretary Tidwell made such good arguments against Mr. Keach that the motion was withdrawn.

This was followed by a discussion on legislative matters and the Tuttle and Weeks Bills were given first consideration. They both provide for a mandatory standard barrel, similar to the Sulzer barrel law. The association voted to endorse both these bills; the Whistler Bill, providing for a standard

Running Water

In House and Barn at even temperature Winter or Summer at Small Cost.

Send Postal for New Water Supply Plan. It will bring you 100 pictures of it in actual use. Do it Now.

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WHITTIER COBURN CO. S.F. SOLE MFRS.

Consulting Horticulturist

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Directs Orchard Development

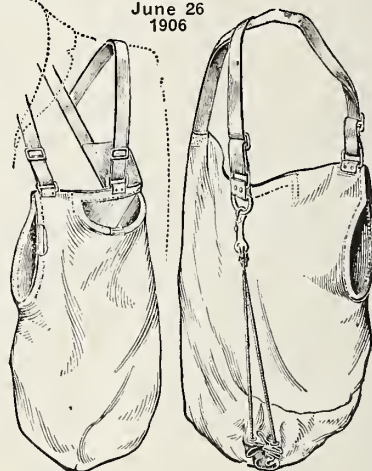
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Orchards Visited. Soils Examined

BOISE, IDAHO

Patented
June 26
1906



FRONT

BACK

IDEAL FRUIT PICKING BAG

Made of heavy weight duck and so arranged as to equalize the load on both shoulders.

The openings are arranged so both hands can be used in picking, and the drawstring is arranged so the fruit can be let out at the bottom in emptying the bag.

The bag can be let down to the bottom of the box before opening the drawstring, thus not bruising the fruit.

This is the best and handiest arrangement for picking fruit that has ever been offered. A trial will convince even the most skeptical.

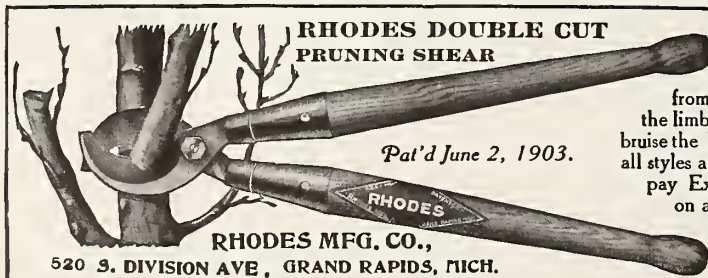
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Agents Wanted

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**RHODES DOUBLE CUT
PRUNING SHEAR**

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RHODES MFG. CO.,

520 S. DIVISION AVE., GRAND RAPIDS, MICH.

THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. We pay Express charges on all orders.

Write for circular and prices.

EQUAL TO FINEST AUTO SPRINGS

in principle, quality of steel and grade of workmanship—in fact, made in a large auto spring plant—Harvey Bolster Springs can not be excelled for resiliency, durability and appearance. Get a set and save many dollars hauling your perishables. Beware of substitutes. If not at your dealer's, write us.

Harvey Spring Co., 784 17th St., Racine, Wis.



apple box, was next discussed and the association voted that the president appoint a conference committee to meet with other National fruit organizations and also act on any standard box legislation which may come up in the future. The Gallup Bill, setting a limit of time which railroads may pay over charge or damage claims, was next up for consideration. Keen interest was taken in this bill, and the matter was finally referred to the Legislative Committee. Apple exporters present discussed the Nelson Bill, making steamship companies liable for damage through negligence; it was finally voted to leave this matter in the hands of the proper committee.

The afternoon session wound up with remarks from the Committee on International Tariffs through its chairman, Carl W. Kimball. The report was read by Secretary Phillips as Mr. Kimball was not present. The report suggested the need of action on better export service, lower rates and the prevention of further advances and the packing and exporting of a better grade of apples. The first idea was referred to the Legislative Committee and the second to the Transportation Committee.

At Thursday session the report of the Advertising Committee and the topic of advertising the apple was fully discussed. The report of the Transportation Committee was also read, as well as the report of the Committee on Grades. The important feature was the address of E. H. Shepard, editor of "Better Fruit," Hood River, Ore., entitled, "The Northwestern Fruit Industry," read by Wilmer Sieg, salesmanager of the Apple Growers' Association of Hood River, Ore., as Mr. E. H. Shepard was unable to be present. In addition to the written speech, Mr. Sieg made a reply to C. H. Williamson, who earlier in the day made some remarks about the poor fruit packed in boxes last season. Mr. Sieg defended the Northwest's product, and said that the packing of poor fruit was an exception and not the rule. H. M. Weil made the report of the membership committee and announced that William L. Wagner won the silver loving cup for securing the most new members and H. M. Weil won the silver match case for securing the next highest number of members. The place for next year's convention was Boston and the convention will be held some time during August. The awards of winners

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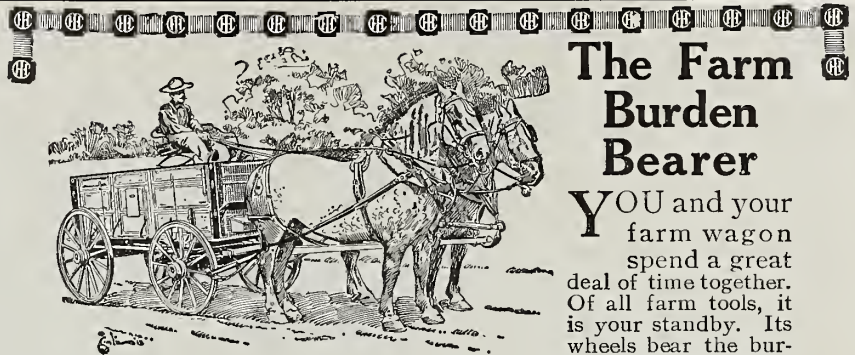
of Missouri, in the famous Strawberry Land? Apples, Peaches, Pears, Grapes, Raspberries, etc., all grow excellently. Ideal location for the dairy and poultry business. The winters are mild and of short duration. An abundance of rainfall during the summer months assures plenty of moisture for growing crops.

We offer for sale 60,000 acres of land in 40-acre tracts or more, cheap and on easy terms. Located in Stone and McDonald Counties. For further information address

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The Farm Burden Bearer

YOU and your farm wagon spend a great deal of time together. Of all farm tools, it is your standby. Its wheels bear the burden of big loads—tow-

ering racks of hay and grain, sacks of produce, loads of sand and gravel, anything that needs moving, over miles of roads to market. It takes solid strength to stand up long under that. When next you ride on a load, listen to the constant packing, creaking, groaning sound of the wagon box, wheels, and running gear as the load pitches back and forth over the road ruts. Not an unpleasant sound, but the strain that causes it is hard on the wagon. I H C wagons—

Weber Columbus New Bettendorf Steel King

give the buyer the most he can get for his money because they defy hard usage for the longest time, and are easiest on the horses.

This makes I H C wagon reputation: Selection of the finest grades of lumber, oak, hickory and pine, and of the best quality steel and iron; many months of toughening air-drying for every piece of wood; skilled assembling of parts, fitting of bolts and rivets, and perfect shaping and ironing; application of the purest paint to act as wood preservative and to prevent shrinking and warping of the wood. When the wagon is ready for the farmer, it is practically perfect in every detail and thoroughly up to the I H C standard.

And there are many other reasons we have not room for here why I H C wagons are the best to buy. Weber and Columbus wagons have wood gears; New Bettendorf and Steel King have steel gears. A visit and a talk at your local dealer's, where the wagons may be seen and studied, will soon convince you as to the wagon you want. Get catalogues from the dealer, or, write the nearest branch house.

WESTERN BRANCH HOUSES: Denver, Col.; Helena, Mont.; Portland, Ore.; Spokane, Wash.; Salt Lake City, Utah; San Francisco, Cal.

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By an arrangement with
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Co. we are pleased to an-
nounce we can furnish a
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RED GRAVENSTEIN

No apple in years has at-
tracted as much favorable
attention and comment.
In a letter dated August
19, 1912,

Prof. W. S. Thornber says:

"I believe that it is bound to
become one of the very Popular,
valuable apples of the Pacific
Northwest."

Our Prices are Right

Our Stock is Right

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PORTLAND, OREGON

in the exhibit were also announced, which met with the approval of all present and the judges were highly commended on their selections. The committee on the good of the association recommended that the dues be raised from \$20 to \$25 and the initiation fee from \$5 to \$10, and also that the June crop report be abolished; both these recommendations were passed. E. W. J. Hearty made a talk on the Lessons of the Season. The election of officers was the closing business of the session and the recommendations of the nominating committee were elected by unanimous consent.

At Friday's session of the convention the reports of the state vice-presidents were read and the annual crop report was discussed. Retiring President Loomis was presented with a solid silver vase as a token of appreciation from the association. The association voted to discontinue the practice of giving out the annual crop report and will hereafter keep it confidential. The vote taken was close and was carried by a majority of only five votes.

The bee-hive of the convention was undoubtedly U. Grant Border's room adjoining Secretary Phillips', and bordering on the convention floor. Mr. Border's mission was promotion of advertising—to teach the advisability of advertising to the apple—and he was true to the cause. The spirit of publicity stood out, both inside and outside his quarters, and attracted attention and discussion beyond all expectations. To say that Mr. Border was the "Queen-bee," does not convey in the least this Baltimorean's activity for the cause, and his address the second day of the convention stands out over anything else that was talked of or transacted during the three days' session. He had studied his part, knew what he was talking about, delivered it as only a trained actor could, proved every utterance he made, and threw a bomb, fuse ignited, into the old school dealers who have been crying "Over production," and at the same time, making not the slightest effort to increase consumption.

He cited the fact that there are millions of school children and wage earners who go to school and to work every day without an apple in their lunch baskets, and that there would be at no time an over supply of apples if these people and children were taught to eat apples, as do the cereal and other food concerns teach the public to consume their respective productions. "The Children Need the Apples as Daddy Needs His Smoke," appeared on a large banner over Mr. Border's door just opposite the hall entrance. Inside, booklets and circulars were piled up on tables and freely distributed. The most talked of literature was a book giving 197 different ways of using apples. Mr. Border is attempting to popularize "197" so that whenever this number is seen, it will be understood to mean apples.

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Light, strong and
durable
"Better Fruit" sub-
scribers demand
the "Better Box" **BOXES**

TWO CARLOADS DAILY

Ask for Our Prices
Delivered your Station

**Vegetable Crates
and
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All Kinds**

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Hamilton Made Spraying Hose

will spray your trees without trouble or
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One trial sufficient to convince.

PERFECT SPRAYING HOSE

Every length will stand 600 pounds and
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Stands 350 pounds. Guaranteed for 100
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or shipped direct from factory, cash
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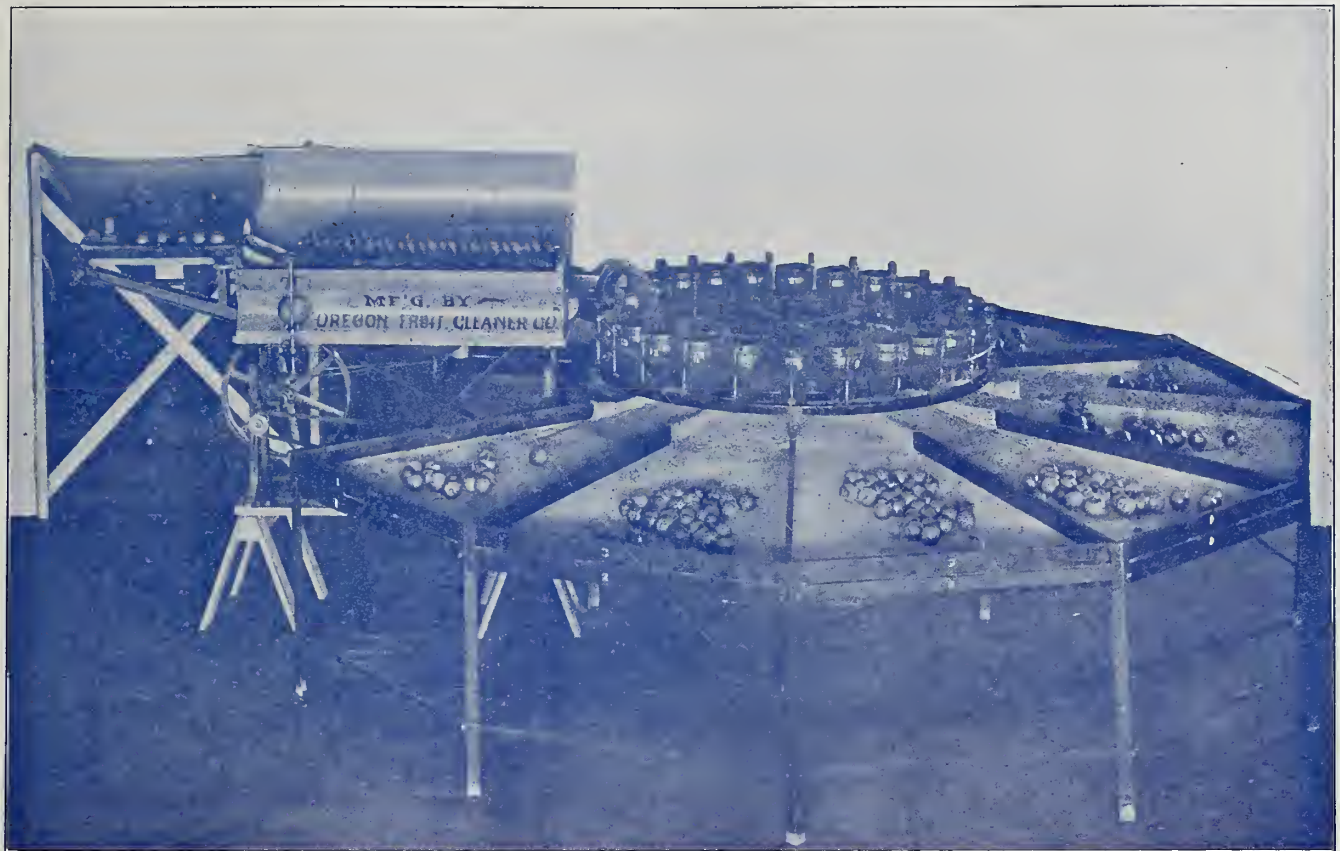
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TO SHORT-CUT the process of distribution is the constant effort of every Producer and Grower. To the Grower, "Cutting Out the Middleman" suggests reduction of selling cost. To the Consumer it means the reduction of the high cost of living. The Producer must, however, remember that as long as he produces a surplus of any thing he must have someone to market and distribute that surplus and to put it in circulation where and when it is wanted.

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